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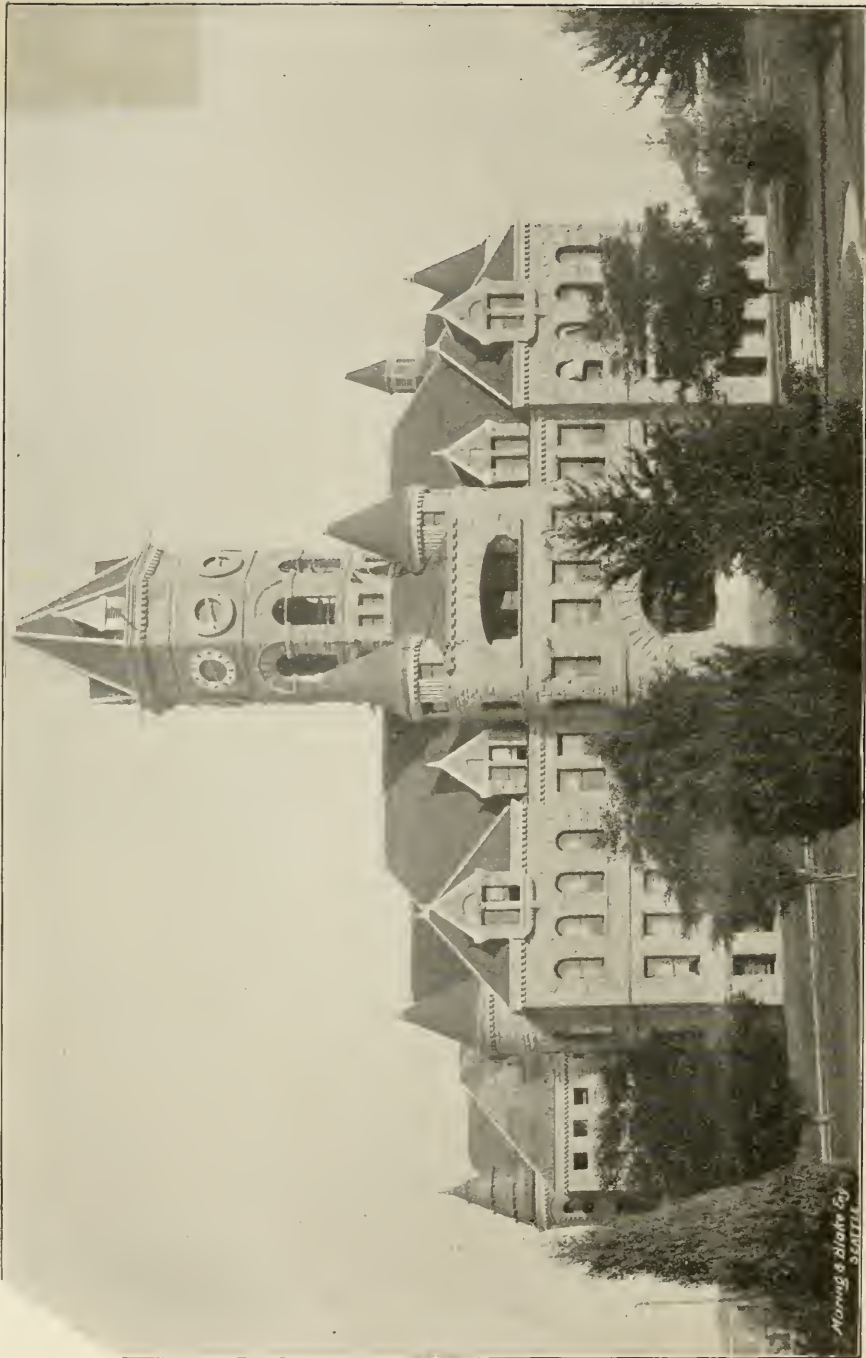
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THE STATE CAPITOL, OLYMPIA, WASH

AGRICULTURAL, MANUFACTURING
AND COMMERCIAL

RESOURCES AND CAPABILITIES

—OF—

WASHINGTON

1903

Washington - Washington
PUBLISHED FOR

GRATUITOUS DISTRIBUTION

BY THE

BUREAU OF STATISTICS, AGRICULTURE
AND IMMIGRATION.

A. W. FRATER,
Deputy Commissioner.

SAM H. NICHOLS,
Ex-officio Commissioner.

Washington
OLYMPIA, WASH.:
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1903.

OFFICE OF THE
BUREAU OF STATISTICS, AGRICULTURE AND IMMIGRATION,
OLYMPIA, WASH., September 15th, 1903.

To His Excellency Henry McBride, Governor of Washington:—

We have the honor to transmit herewith the Biennial Report of the Bureau of Statistics, Agriculture and Immigration for the year 1903.

Very respectfully,

SAM H. NICHOLS,

Secretary of State.

Ex-officio Commissioner.

A. W. FRATER,

Deputy Commissioner.

INTRODUCTORY.

OFFICE OF THE
BUREAU OF STATISTICS, AGRICULTURE
AND IMMIGRATION,
OLYMPIA, WASHINGTON, Sept. 15th, 1903.

To the Public:

In submitting to you the 1903 report of the Bureau of Statistics, Agriculture and Immigration it affords us pleasure to state that from all the information at hand the efforts of this Bureau have been the means of disseminating throughout the country a knowledge of the varied resources and opportunities offered to energetic people in this state, and as a result of this information large numbers of desirable immigrants have been induced to come to Washington. We are of the opinion that the work of the Bureau has been of great benefit to the people of the various sections of the state, as the state's history and its resources have been but slightly known to a great many of her citizens. We have attempted to make it reasonably full and minute so far as the circumstances attending its preparation would permit. It is unnecessary to call attention to the inefficiencies of the law which was designed to secure assistance to this Bureau in the gathering of valuable statistics and to subserve the general purpose of the Bureau, for it is well known that officials will not put themselves out to accommodate any other department of the government without special compensation.

In this work as in others we first give a prospective view

of the state's resources, its commercial position, its future and its people. We also treat of its lumber industry, fisheries, mines, manufactures, agriculture and many miscellaneous topics, all of which are useful and instructive. But while our lumber industry is the greatest, and our commercial situation second to that of no other place in the world. We are of the opinion that that which we most desire to encourage at this time is the agricultural development of the state and it is along those lines we have given subjects particular prominence. It seems to us that upon the success of this branch of industry is based the hope of every other, for of it every other industry is born. Under this head we have treated of Agriculture, Irrigation, Horticulture, Stock-raising and Dairying. And the subject matter covered under the various heads of this branch of industry treats particularly of conditions that prevail in the different sections of the state.

The purpose of this publication is not only as an immigration document for distribution throughout the entire country, but it is intended to be particularly helpful to the farmers, stockraisers and business men of the state. It has been our effort to induce the farmers of the state to engage in diversified farming so they will not be dependent upon any one crop. The farmer who produces his home supplies, and has something to sell each year, is far more independent than the one-crop man, and we have endeavored in this work to put especial emphasis upon this fact and to bring it prominently before the agricultural element as we feel that their prosperity may in this manner be greatly enhanced.

We wish to make acknowledgement of the fact that this Bureau has received better co-operation on the part of the

assessors of the various counties and other officials called upon to assist in furnishing material and data for this Bureau, and we are under obligations to many such for their assistance.

SAM H. NICHOLS,

*Secretary of State,
Ex-officio Commissioner.*

A. W. FRATER,

Deputy Commissioner.

WASHINGTON, THE EVERGREEN STATE.

Its Inherent Resources; Its Commercial Connections;
Its People.

The part of the work herewith presented is designed to deal with the general features of the state.

We shall better appreciate the possibilities of this state if we first consider those conditions which have made other countries great. Three factors are essential to the greatness of a country. First, its inherent resources; second, its commercial connections; and third, the force and intelligence of its people. Phœnicia, Greece, Carthage, Italy, Holland, England, these lands have one after another held sway over the commerce and hence over the destinies of the world, from the coincidence of the facts that they had valuable products to sell, and that they had the facilities for transporting these products to the markets of the world. They had goods and they had ships. By the inevitable logic of events they became workshops of industry and distributors of products. By an equally inevitable logic they accumulated wealth and became centers of all forms of human activity.

Only a glance across the field of history is needed to show that to these primary physical requisites must be added intelligent human energy. This vital factor can be secured only by such social and political conditions as foster high mental, moral and patriotic traits of the great mass of the people. The highest achievements of human nature have therefore been attained in democracies or in such constitutional monarchies as have strong democratic tendencies. Some lands, as New England or Scotland, have become great without abundant natural resources because they had commerce and they had men. Others, as Turkey, have failed of greatness, even with the most diversified natural re-

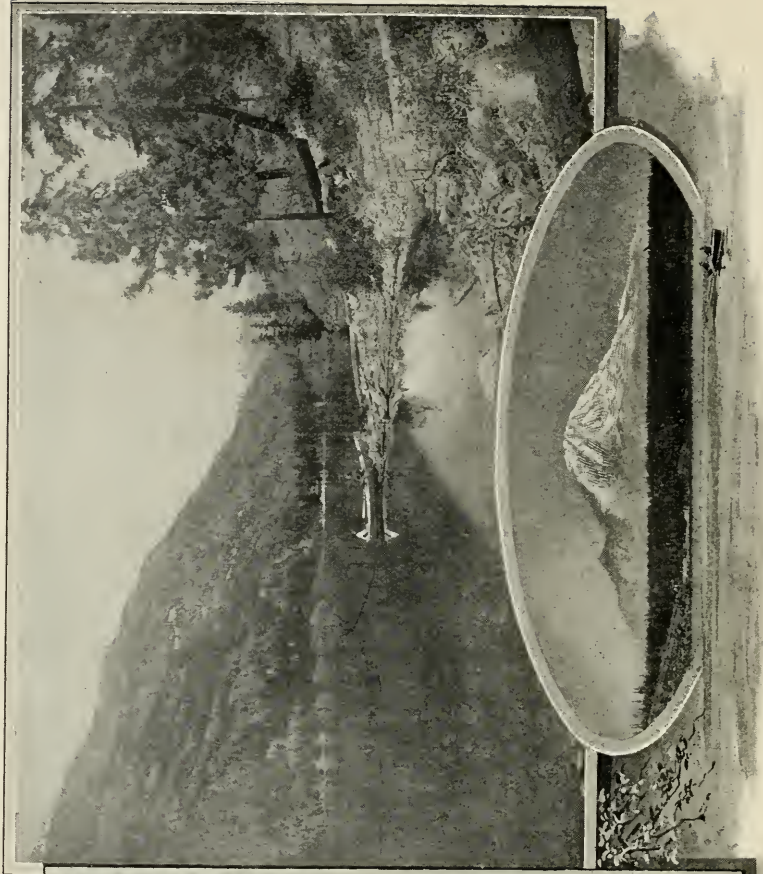
sources and best of commercial situations, because the Turk is woefully deficient in manhood.

Naturally the greatest accumulations of wealth, the comforts and agencies of life, the treasures of art, literature, science, all desirable human conditions, will be found where there is the highest combination of the three great essentials already named.

It is not a vain American boast, but the sober truth of history, that our land exhibits this great epic poem of human progress in greater perfection than any other country. The Pittsburgs, Cincinnati, Chicagos, Omahas and St. Pauls of the older West are the result of the combination of these three vital agencies. The same forces will produce, in fact have already produced, the same results in the newer West.

We believe that we shall find the great general fact thus developed to be exemplified in an equally clear and convincing manner in the state with which we are now dealing, the State of Washington.

As part of old Oregon, with its thrilling and momentous history, our state had already passed through the successive eras of discovery, exploration, fur trade, international discussion and treaty, settlement, and most important of all, the coming in of the American immigrant and the American home-builder. All this was prior to 1853. In that year Washington Territory, then including Idaho and part of Montana, was created, with the hero, Isaac I. Stevens, as the first governor. With prophetic vision he foresaw the time when the barrier of the Cascade mountains would yield a way to the passage of the railway, and when the commerce of half the world would cross what was then the wild and beautiful expanse of Washington. Of the history of the fifty years between the establishment of the Territory of Washington and the present date, it is not the purpose of this article to speak. Suffice it to say that the first thirty-six years were years of slow development, and as it were of self-realization. Isolated by vast distances from the East, and not having like California a sudden and enormous attraction like the gold mines, Washington lay shrouded in the mists, its resources little known and less developed. Even when settlement began during the sixties in the productive valley of the



Lake Chelan. Mt. Ranier. SOME CHOICE BITS OF WASHINGTON SCENERY.



Nooksack Falls.

Wm. S. White, Prop. Seattle

Walla Walla, it was still so isolated as to furnish small attraction to general immigration, while to the world at large it was as unfamiliar as the heart of Africa. In those early days, too, the vast timber resources of Puget Sound were only known to a few. But the pioneers of that great industry were even then beginning to make fortunes at Port Gamble, Port Madison and other "Ports" on the Sound. Yet there was but a touching here and there of the gigantic latent resources of the state, until the epoch of railroad building in the eighties suddenly disclosed to the great hosts of American homeseekers and capitalists the fact that here on the far northwestern coast was a land of surpassing charms and productive capacity. Then in 1889 came statehood and with it the entrance upon a new life. Since then the once isolated Washington has partaken of the life of the world, and the world has begun to realize her possibilities. During those nearly forty years of hidden growth, and then, more dramatically though not more truly, during the dozen years of swift and brilliant development following, the State of Washington has been disclosing to the wondering eyes of an admiring world those same three basal facts which we have already shown to lie at the foundation of great nations; that is, inherent resources, commercial connections and intelligent human industry.

Let us now turn to a systematic consideration of these three controlling factors in the destiny of our state.

NATURAL DIVISIONS.

Take your map and you will observe that the state is naturally divisible into four great areas; the maritime, the mountains, the semi-arid lands of the center, and the rolling plains of the eastern upland. Let us consider each of these divisions in order.

The Maritime Section.

This is composed of four great bodies of water, with the tributaries of each; Puget Sound, Columbia river, Gray's Harbor, and Shoalwater Bay. While each of these has special features of its own, they have certain features in common. Together they occupy the entire western margin of the state, and, with the land areas immediately contiguous, they embrace a

territory of about two hundred and ten miles by one hundred. This territory is somewhat broken. The soil of the uplands is productive, and there are a great many valleys where the soil is extremely fertile. But whether upland or valley, broken or level, the prevailing characteristic of this sea-coast country is timber.

The Timber Belt.

“These are the forest primeval.” Also, “The continuous woods where rolls the Oregon” are found here in great abundance, though we may remark incidentally that he now hears many other “sounds than his own dashings.” These forests are the greatest wealth of this region. Anything of a sylvan nature more magnificent than a Western Washington forest can never be seen, hardly even imagined. The king of the woods is the yellow fir. Its slender bole, often two hundred feet without a limb, with the topping coronal of green, swaying in the slightest breeze, though sustaining itself more easily against falling than would be thought possible, has furnished the mast for many a “great admiral,” while in the form of sawn lumber it has contributed to the erection of houses of every description under every sky of the world. Clear, straight, elastic, with extraordinary tensile power, the yellow fir wears his diadem proudly, secure in his pre-eminence among the commercial timbers of the world.

But Western Washington has many other marketable trees. Spruce of gigantic size, cedar of majestic appearance and with satin-like texture, hemlock, pine of many varieties, larch and tamarack, of the soft woods; and maple, ash and alder, representing the hard woods, are found throughout the entire area from the Cascade mountains to the ocean. Interwoven with the giant growth of fir, spruce and cedar, which not infrequently towers to an elevation of three hundred feet, is a perfect jungle of vine maple, dog-wood, hazel and briars of all sorts from the “devil’s walking stick” to the blackberry and salmon-berry with their delicious fruit. Rapid motion is a practical impossibility in one of these great forests. The sun barely filters through the wilderness of leaves. The ground never becomes really dry even in late summer. The productive capacity of this great forest is almost beyond comprehension. Single trees

have been known to yield 50,000 feet. Single acres have yielded 500,000 feet. It was estimated some years ago that there was standing within a radius of eight miles of Skamokawa on the Columbia river not less than six hundred million feet of yellow fir. The lumber output of the state for the last few years has exceeded a billion feet annually. The mighty forest stretching from the Straights of Fuca to Humbolt Bay in California, the best part of it in Washington, is the largest, in fact the only, great timber area left on the globe. Its enormous commercial value is becoming constantly more apparent. This has been indicated in the past few years by the rush of settlers into the timber section of the State.

The Fisheries.

Next to timber in importance of the natural resources of the Coast belt is the fishing industry. It has been known since the first discovery of Oregon that the Columbia river abounded in salmon. It was not, however, till 1870 that the industry of canning the Royal Chinook salmon, the king of fish, began. Now the industry has extended to Puget Sound, and at the present time the output for the Sound exceeds a million cases annually, while that for the Columbia river is about half as large. But while it has been known for many years that the salmon was a source of vast revenue, it will be of but a few years until deep sea fishing off our coast will equal or exceed that of Newfoundland or Norway. Cod, both white and black bass, and halibut, to say nothing of sole, flounders, rock cod and many other varieties, are being found in constantly increasing numbers, until it has become evident that the treasure of the water is as bounteously bestowed as that of the land.

Farm Lands.

Although the general upland of Western Washington is rolling, there is a vast acreage of level lands in the river and creek bottoms and tide-marshes, all of which when cleared furnish a most inviting field to horticulture, agriculture and dairying. By reason of the soft humid climate, rich soil and numerous pure streams, these valleys are indeed the very home of the gardener, stockraiser and dairyman. Moreover, by reason of the infinite interlacement of streams, water transportation is so cheap and easy as to place this class of production within most convenient

communication of the never failing markets of Seattle, and the other growing cities. Few parts of the world offer so attractive and lucrative opportunities as do these valleys; of which the chief, are those of Lewis River, Cowlitz, Chehalis, Puyallup, White River, Snohomish, Stillaguamish, Skagit, and Nooksack. Many others of the same general class though smaller could be named. Their yield of butter, cheese, eggs, hops, oats, hay, fruits, vegetables, and poultry is already vast, though their development is but begun. The price of land in these valleys seems at first higher than the stranger expects. But when the productive capacity and the favorable location is taken into account, it is seen that prices are normal.

Coal Fields.

Any account of Western Washington would be incomplete which did not mention the vast coal fields located in the Bellingham Bay, Carbonado, Wilkison, Black Diamond and New Castle districts. The latter indeed pass out of the maritime and into the beginning of the mountain zone of the state. Deposits of iron ore are known to exist at various points along the meeting points of shore and mountain. Put the timber, the coal, the iron, and the multiplied arms of Puget Sound, with its almost numberless tributaries, into one expression, and the obvious answer is "ship-building." And that here is to be the greatest shipyard of the twentieth century, no one familiar with conditions can doubt. And what that will mean for population, wealth, industry, and all the arts of civilization we may imagine but cannot comprehend. We shall sometime have Carthage, Venice, England and Pennsylvania all combined upon our western border.

THE CASCADE MOUNTAINS.

We turn eastward to zone number two, the Cascade mountains. If we were a fanciful or a primitive people, we would find an object of worship in these mountains. Flanked with mighty forests, veined with coal, iron, gold, silver and copper, ledged with onyx, marble, granite as yet hardly touched by the hand of enterprise, the source of vitalizing waters, from which the arid plains on the east side are rendered productive, and the wheels of industry on the west are turned, these magnificent

mountains, grand, sombre, mysterious, beautiful, sublime, are the industrial as well as the scenic backbone of the state. They extend directly through the state from north to south, dividing it into the two natural divisions of the east and west. The one dry, breezy, open; the other damp, still, timbered. The general elevation of the range is seven thousand feet, with hundreds of peaks of nine thousand or more, while at irregular intervals stupendous volcanic peaks attain heights of from eleven to over fourteen thousand five hundred feet. These glacier crowned kings of the range are—beginning at the south—Adams, St. Helens, Ranier, Stewart, Index, Glacier Peak, Shuksan, Baker; and which of these is grandest is hard to say. Ranier is, however, distinctly the highest, attaining an elevation of fourteen thousand five hundred and seventeen feet, according to most recent measurements. Several remarkable spurs run off at right angles to the main range, of which the greatest are the Simcoe, the Peshastine, the Chelan, and the Okanogan. The precious metals are found in nearly every part of the Cascade mountains. Some of the best known mining districts are: The Silverton, the Index and the Monte Cristo, east of Everett; the Mt. Baker and Slate Creek districts in Whatcom county; the Peshastin, north of Ellensburg; the Chelan and Metliow, and the Conconully, Ruby City and Great Republic districts in the northeast. Though none of these districts have yet become great producers yet the region in which they lie is evidently a part of that great zone of precious ores which sweeps in a gigantic semi-circle northwesterly from the Coeur d'Alene through the LeRoy and Kootenai regions, and thence bending southward toward Puget Sound. The mines of Washington are yet comparatively undeveloped, but there can be no question of their future greatness. Immense deposits of coal are known to exist in the mountain belt, though there has been little work done as yet, except in the Cle Elum district adjoining the Northern Pacific railroad. The greatest development having been confined to the coal mines before mentioned as belonging to the maritime belt. A volume would be required to speak adequately of this great wonderland, the mountain belt. With this, as with other branches of this publication, special articles will treat of special topics, and we shall leave this for the next zone eastward.

THE IRRIGABLE BELT.

The third grand natural division of Washington is the semi-arid belt, extending from near the junction of Moses Coulee with the Columbia river on the north to the vicinity of Wallula on the south. This belt is approximately ninety miles long by seventy wide, and embraces parts of Chelan, Douglas, Kittitas, Franklin, Yakima, Walla Walla, and Klickitat counties. The axis of it is the Columbia, while a number of lateral valleys branch from it. By far the largest area is that of the Yakima, a hundred and twenty-five miles long with a number of tributaries. An immense area borders the Columbia and Snake rivers directly, especially at the point of their junction. If any one part of our state more than another can be called the coming country, it is the irrigable belt. Here is a region of insufficient rainfall, yet of the richest soil, with hot sun and clear skies, such as put the very juice of life into fruit and vegetables. Those portions of the semi-arid belt which border the Columbia and Snake rivers have a warmer climate than any location on the Pacific Coast north of about the vicinity of Sacramento, Cal. At points about Pasco and Kennewick, berries are produced a month earlier than in the Willamette valley, and two weeks earlier than at Walla Walla. The prodigious advancement of the Yakima, the Wenatchee and the lower Walla Walla valleys has been the marvel of the last five years. The water for irrigating is drawn from the rivers named by various ditch companies. So far the supply of water has been ample, but the time is rapidly coming when some vaster scheme will be needed to adequately supply the large tracts of land yet in semi-desert condition. The United States government no doubt will soon take hold of the problem, and when it does we shall have a development in our semi-arid belt equal to that of central California. Opportunities for the homeseeker and investor at these points are most attractive. Of course good judgment and close observation are needed here as anywhere in making investments. The bulk of government land, in close proximity to ditches has already been taken, though there are thousands of acres farther away still subject to entry, which will be sometime, and that at no far distant day, under adequate irrigation systems. All of the cereals are produced but the special products of the irrigated

belt are alfalfa, timothy, hops, fruits of all sorts, and vegetables. Yakima county now occupies the first place in exportation of these products, a place held until within two years by Walla Walla county; but the irrigated areas of Yakima have gained so enormously within recent years as to carry it beyond competition.

THE WHEAT BELT.

The fourth great natural division of this state is the plateau belt of the eastern border, and with this should be included in natural character the upland regions of Klickitat and Yakima counties, and the north half of Douglas county, geographically isolated from the rest. The plateau zone consists of rolling prairie, originally covered with bunch grass and constituting the great stock range of this state in former pastoral days. The soil is of a volcanic dust extraordinary for depth, durability and the presence of the essential ingredients for wheat. This region varies in elevation from eight hundred feet in western Walla Walla and Franklin counties to three thousand feet and more in the eastern part of Whitman, and in parts of Douglas and Lincoln counties. The climate varies similarly from a semi-arid in the southwest to cool and damp in the northeast. The soil is essentially the same, though with more rain in the regions of greater rainfall. Wheat is the great product, though anything which the climate will admit of grows luxuriantly on these volcanic hills. Of all lands of the west, even of the world, the uplands of Eastern Washington, with the parts of Oregon and Idaho adjoining, must be accorded the first place for natural adaptability to wheat raising. It is only within the past few years that the capacity of this belt for grain was fully understood. Forty years ago the well watered bottom lands of the valleys were subdued, and they rightly rewarded the pioneers in their cultivation. But no one then thought that the high lands would ever be fit for anything but pasture. In 1872 farming on the uplands of Eastern Washington was begun, and in 1881 there was produced on a thousand-acre ranch a crop of fifty-one thousand bushels of wheat. With such results as these it became evident that a portion of the upland region at least could be relied on for wheat, but even then no one realized that wheat could be produced upon the whole great area of hills and flats

throughout the major parts of Walla Walla, Adams, Columbia, Garfield, Asotin, Whitman, Douglas, Lincoln, Spokane, and even Franklin and Klickitat counties. This is now demonstrated, and as a result the lands of this immense belt of nearly twenty thousand square miles in extent have risen in value to three or four times their former worth. Land is still moderate in price, ranging from ten to sixty dollars an acre, according to improvements and location. A single crop has in some cases paid for the land. The cost of raising wheat on the lighter and flatter land of Walla Walla and Adams counties is estimated at about 20 cents a bushel. In the heavy and moist lands, where weeds are rank, it is thought by close observers to reach as much as 30 cents a bushel. With wheat at 60 cents a bushel farmers make money. At eighty or ninety, figures which have been reached, the profits of farmers exceed those of people in most other occupations. A stranger has only to pass through Walla Walla, Ritzville, Colfax, Davenport, Oakesdale, and points in Douglas and other counties, (even Spokane belongs largely to the same category,) and to learn that all the vast improvements thus seen are the results of the wheat money, fruit money, and hay money of the last dozen years, to form some conception of the productive capacity of this Inland Empire. The wheat crop of 1902 in Washington amounted to about 30,500,000 bushels. The especially fertile and more rainy part of the wheat belt is beginning now to find diversified farming to furnish the best results.

STOCK RAISING.

The raising of stock is doubtless going to be one great branch of industry here. Within the past year or two fine imported horses, cattle and hogs have come into the possession of many of the foothill farmers, and the improved results for the entire region will soon become manifest. To people accustomed to the relatively hard lot of farmers in some portions of our country, the comfort and ease of life, even the prodigality of bounty, of the farming class in the older and better developed parts of Eastern Washington come as a revelation. The lot of one of these farmers, who has a well cultivated ranch clear of debt, is an enviable one. He is independent, intelligent, progressive, the best type of the genuine American, the backbone of the nation. Few men in town in business or pro-



THE BARONET, No. 166527. SHORT HORN YEARLING BULL.
Owned by Geo. D. McLean, Mt. Vernon, Wash.



THOROUGHbred SHORT HORN YEARLING HEIFERS.
Owned by Metsker & Klmgard, Pullman, Wash.

fessional life have as much of solid comfort or as much opportunity for accumulating wealth as has the well established wheat farmer. Rural delivery brings the world to him. Many farm houses are provided with telephones. In not a few farm houses regular systems of hot and cold water are provided. Elegant buggies and handsome horses are common. In the foothill region fine springs abound, making water for lawns abundant, and as a result handsome lawns and flower gardens are beginning to decorate the former bare and unpleasing surroundings. In short, the art of living is being studied successfully to an extent hitherto unknown in our rural regions.

IMPROVING ROADS.

The dusty roads incident to the soil and climate are being improved by the process of strawing. In some parts of the country the custom has been established of having a "straw day." The farmers get together, each one bringing a load of straw. The ladies come out with bountiful viands and all manner of good things, they have speech-making, songs, games and a general good time, and get the road strawed besides. After having been well covered for two or three successive seasons, a road becomes permanently hardened and will not require much attention again for years. The California method of oiling the road has been broached in Eastern Washington, and quite possibly may become the accepted substitute for straw. One thing in the wheat belt of our state is worthy the especial attention of strangers, and that is the general business solidity of all standard interests. Failures are very rare. There is little wild-cattng, booms are not encouraged. As a result the ups and downs of hard times are slighter than elsewhere. There is a stability and regularity about all legitimate enterprises which is not usual in so new a country. In a word, the industrial basis of the country is solid, even though the conditions seem to some, accustomed to the more speculative methods of other parts of the west, to be slow.

We have endeavored in the preceding paragraphs to convey to the reader an accurate picture of the natural resources of the State of Washington. We turn now to consider the second branch of our inquiry, the commercial position of the state in the union and in the world.

OUR COMMERCIAL POSITION.

Let the reader again consult his map. First, what are the railroad connections with the rest of the union? Washington has four competing transcontinental lines, either directly upon her soil or with immediate connections. These are the Union Pacific, the Northern Pacific, Great Northern and Canadian Pacific. The Southern Pacific with its northern terminus at Portland is also so accessible as to constitute in effect a fifth line. This is one of the great, indeed overwhelming, advantages of Washington over California. No one can reasonably depreciate the lordly resources of the Golden State, but it may nevertheless be truthfully claimed that Washington has gained vastly upon her in the last decade. And superior railroad facilities may be considered one great element in this relative gain. California is bound up in the greedy clutch of one great railroad, while Washington has the benefit of abundant competition. As a result of this, immigration has flowed into Washington with a freedom and fullness unknown elsewhere on the Pacific Coast. A natural consequence of this has been a steady reduction in freight and passenger rates. Rates from the wheat belt to the seaboard were last year voluntarily reduced ten per cent by the Great Northern and Northern Pacific railroads, making the condition of the farmers much better than elsewhere on the Pacific Coast. Another consequence of our railroad situation is that a number of local roads have been built and are in operation. As an example of the amount of business on some of these local roads, we may mention the Washington & Columbia River Railroad, connecting the wheat belt of Walla Walla, Umatilla and Columbia counties with the Northern Pacific at Pasco. This line has one hundred and sixty miles of road, and its territory contains about forty-five thousand people. During the year 1900 it carried into the country about forty thousand tons of freight, and carried out one hundred and fifty thousand tons. The Oregon Railroad & Navigation line traverses the same territory, and does not fall far from the same amount of business. This shows a total movement of freight for one year for this comparatively small region of approximately 400,000 tons of freight. Few regions can equal this showing. And now the question very naturally arises, how

comes it to pass that these railroad companies are putting such vast sums of money into the construction and equipment upon the costliest scale of railroad building in this new and comparatively sparsely settled state? Even if the native resources are great, will they justify so extensive an outlay? In the answer to this query may be found the foreshadowing of the future of Washington. The answer simply is that these great expenditures are made, not only to accommodate local traffic, vast though that may be. Nor are they made even to accommodate transcontinental traffic, immense as that already is. Therefore but one conclusion can be reached, and that is that these transcontinental lines are destined to handle a world commerce. The keen and far seeing managers of the lines crossing this state are reaching out for nothing short of the world's trade. With this idea, we may again consult our map, or better yet a globe, with a view to forecasting as near as may be the destiny of the state.

PUGET SOUND.

First, look at Puget Sound as a harbor. We may call it one vast harbor, or a hundred harbors. The world's map shows nowhere else such a series of connected waters, seemingly made for the express purpose of accommodating shipping. The language of panegyric has been exhausted many times in attempting to describe this "Mediterranean of the Pacific." Even Vancouver, the stolid old Britain, by whom most of the names now familiar to us on the Sound were applied, fell into ecstasies over the beauty and grandeur of this body of water. It is worth while to quote here the words of this navigator of 1792. He says: "To describe the beauties of this region will on some future occasion be a very grateful task to the pen of some skillful panegyrist. The serenity of the climate, the innumerable pleasing landscapes and the abundant fertility that unassisted nature puts forth, requires only to be enriched by the industry of man with villages, mansions, cottages and other buildings to make the most lovely country that can be imagined, while the labor of its inhabitants would be amply rewarded in the bounties that nature seems ready to bestow on cultivation." This, in the somewhat ponderous style characteristic of the author and the time, gives the impression which our

new state in its native wildness wrought upon his mind. We are now beginning to see something of the effects produced by the improvements which he foretold. The shoreline of Washington, including the coast and Puget Sound, is 2,070 miles, far more than that of any other state. By far the greater portion of this line represents the devious meanderings of Puget Sound and its multiplied branches. Now, after we have fixed in our minds the character of Puget Sound, and have called up again the facts already developed about the timber and mineral resources adjacent thereto, we are prepared to study the international position of the state.

Look north, and what do we see? We see a continuation of the network of navigable waters, innumerable islands, great timber and coal resources, enormous mining capabilities, all in the various parts of British Columbia. Still farther north, weird old Alaska rises from her Boreal mists with the treasures of the Klondike and Nome in her hand, with all the treasures of timber, oil and coal heaped about her feet. Look toward the east, and we see the great states of the Rockies, Idaho and Montana with their gold, silver and copper mines and their myriads of livestock, all alike seeking markets and exchange points, while yet beyond comes the endless procession—the Dakotas, Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, Pennsylvania, New York and Massachusetts, with teeming populations, vast and ever-increasing wealth, countless arts and manufactures, seeking world markets for the infinite products of their industry. Look southward and what do our eyes rest upon? We see there the semi-tropic lands of California and Mexico, the home of the vine, the olive, the orange and the coffee tree; and yet beyond the treasured realms of the Incas, now rousing again under the stimulus of American life and enterprise, getting ready to draw forth from their borders the varied products of both tropic and temperate clime, which seek also exchange points in northern lands.

Now face the west, immortal west, the direction to which from the beginning the steps of immigration and enterprise seem always to have tended, and what is the scope of our vision? We see the Pacific ocean with its countless tropic islands whose products are coming more and more into demand.

There we see the Philippines with the new fields offered in them to American ingenuity; as well as the new responsibilities entailed upon American manhood and philanthropy. There we see half the population of the globe—the ancient lands of China and Hindoostan—with their slowly awakening desires and modernized powers of consumption, with their habits of patient industry, their almost inconceivable accumulations of treasure, only waiting the golden touch of opportunity to be utilized. We can but dimly realize the immeasurably momentous bearing which these vast populations, when modernized, will have upon all the conditions of the world. With yet another glance see Japan, sprung Athena-like, full grown and full panoplied, from the brain of modern enterprise, and with that look ask yourselves what will the opportunities be when the four hundred millions of China and the two hundred and fifteen millions of India have attained the same degree of civilization and consumptive capacity that Japan has attained in the short space of half a century.

Then, after all these views north, east, south and west, revolve the globe a few times and ask: "Where will be the natural meeting point, the exchange center of all these inconceivably vast products of industry within a century or less at our present rate of progress?" There is hardly more than one answer possible. That the Straits of Juan de Fuca offer the entrance to that great cosmopolis seems as much a part of the commercial gravitation of the planet as that the movements of the Japan current to our shores is a part of the necessary physical gravitation of the waters of the globe. There can be no question that the Pacific ocean is to be the theater of the greatest events of the twentieth century. The conflicting purposes of Russia, England, Germany and France in relation to China; the possible developments of China herself; our own relation to these problems as a world power; our occupation of the Philippine islands and the inevitable entanglements with Asiatic policies in consequence; the question of the new food supplies and machinery and implements, books, railroad equipment and the other multifarious paraphernalia of the seven hundred million people of Asia, in case they follow in the footsteps of Japan, as doubtless they will, into a civilized state — these and like ques-

tions are the ones that must tax the statesmanship, the philanthropy and the wisdom of the world, in the coming half dozen decades.

Such being the case there can scarcely be a doubt that the great theater of the world's life is to be transferred from the Atlantic to the Pacific. Europe is to solve her problems mainly on the sea, and that means the sea where the questions of ownership are yet unsolved. The United States is a world power and must of necessity play her momentous part on the same stage. She must face westward instead of eastward. If the facts sustain us in the conclusions thus far drawn, we are justified in drawing the further conclusion that the most important places in our land will be those where we disembark the traffic of the Pacific, and come in most vital contact with the interests and questions of the future of that great highway of commerce. Where that mighty Oriental business is to get off in the United States is the question of questions for us.

Unless our globe study is mightily deceiving, Puget Sound and the State of Washington are to furnish that great wharf line for the destinies of the Pacific. Here is to be the cross-roads of nations; here is to be the pivot round which continents revolve. Here East and West and North and South are to lock hands across the fair archipelagoes which so puzzled and baffled the navigators of two centuries ago. They imagined that here was a strait joining the Atlantic and Pacific. That strait was known to the navigators of the sixteenth century as the Strait of Anian. When Juan de Fuca entered the strait which now bears his name and passed around Vancouver island, he thought that he had discovered the long sought passage between the two oceans. Maldonado gave a long and apparently veracious account of his journey through the continent from what is now the location of Sitka to a point in Hudson's Bay, past cities and through beautiful rivers and lakes. Maldonado's account was a myth and fabrication. Some historians, as Bancroft, have thought Fuca's to be the same. But at all events, the Strait of Anian has not been found by sea. Yet our modern railroad age has realized the dream of the ancient mariners, only it lies between lines of steel instead of promontories of the ocean. San Francisco and Portland are evidently the only

rivals of the Sound for this position of commercial leadership. Now, while both these cities have great resources and productive regions of wide extent about them, the cities of the Sound have some marked advantages over them. San Francisco is too far south for the Alaska and British Columbia trade. She is on a line of the earth's surface longer by two or three days from the Orient than is Puget Sound. Moreover, San Francisco has no such natural resources for ship-building as are centered at the Sound. As for Portland, it is too far inland for the most economical shipping, and to be seriously considered as a rival to Puget Sound. And while the entrance to the Columbia river is not so bad as has sometimes been represented, yet it obviously can not be compared with the approaches to Seattle, Tacoma, Everett and Whatcom.

In brief, with all added examination that we make, we find ourselves confirmed in the conclusion that Puget Sound is to be the future Carthage, Venice, Holland and England combined of the greater world of the twentieth century. A confirmation of this conclusion is found in the fact that James J. Hill and other far-seeing capitalists are preparing railways and steamship lines for the coming world traffic that is bound to cross the State of Washington. In the month of April last the Minnesota, one of Mr. Hill's two great freight steamers, was launched at Bridgeport, Conn. The Minnesota has a dead weight cargo capacity of 28,000 tons, which is 10,000 tons greater capacity than the Cedric, till now the record holder for large freighters. This great boat, with its twin sister, the Dakota, is to ply, in connection with the Great Northern Railway, between Puget Sound and the Orient, and they will be loaded both ways for their great trans-Pacific voyages. When these steamers drop anchor in the waters of the Sound it will become obvious to the world, as it is already to those in a position to know, that this state fulfills in the highest degree the second great requisite of an empire-ruling state—the possession of unrivaled commercial connections.

OUR PEOPLE.

But neither local resources nor foreign commerce is sufficient to build here the highest type of a state. "Men of high thinking and noble living" are the essence of statehood. And what

of the men of this State of Washington? First, we may say that the people of this state are a picked lot from all countries. An immigrant coming as far as this state is obliged to have considerable intelligence and enterprise. The ambitious and energetic only would undertake to face the distances and the uncertainties. While the country at large is cosmopolitan, this state is peculiarly so. As an example of this we will give a table showing the places of birth and nationalities of the registered voters of a town in Eastern Washington. It is as follows:

New York.....	51	England.....	18	Massachusetts.....	7
Illinois.....	41	California.....	18	New Jersey.....	6
Missouri.....	39	Minnesota.....	15	Nova Scotia.....	5
Ohio.....	38	Michigan.....	15	Tennessee.....	5
Oregon.....	36	Maine.....	15	Austria.....	5
Indiana.....	35	Kentucky.....	14	Maryland.....	5
Iowa.....	34	Virginia.....	12	Denmark.....	4
Wisconsin.....	25	Ireland.....	12	Norway.....	4
Pennsylvania.....	25	Kansas.....	10	Sweden.....	4
Germany.....	25	Texas.....	10	Vermont.....	10
Canada.....	24	Washington.....	21	Scotland.....	9

From Holland, Nebraska, North Carolina, North Dakota, West Virginia, New Hampshire and Switzerland, three each; from Ontario, Arkansas, Italy, Georgia and New Brunswick, two each; from Connecticut, Florida, India, Luxemburg, Utah, South Carolina, Wyoming, Prussia, Alabama, France, Louisiana, Isle of Jersey, Isle of Man and New Mexico, one each.

Here in one small city thirty-eight states and twenty-two foreign countries are represented. This is the more remarkable when we remember that the place mentioned is an agricultural city in the interior of the state. Such a table compiled for a seaboard town would no doubt reveal an even more striking variety of origin of the inhabitants. The natural result of this cosmopolitan composition of our state is a liberality and general breadth of view which is rare even in the United States. National traits blend, national prejudices are forgotten, while stereotyped social and business habits supplement and correct each other. The patient German, the muscular, industrious Scandinavian, the versatile Frenchman, the persistent, consequential Englishman, the careless and hopeful Irishman—all become mixed in with the scheming, resourceful Yankee, and the optimistic, enterprising Westerner, and the result is a composite “new birth of our new soil,” the American of the future,



UNIVERSITY OF WASHINGTON, SEATTLE, WASH.

1. Boys Dormitory. 2. Girls Dormitory. 3. Science Hall. 4. Administration Building.

hard to define yet different from other people, having enough of their traits to connect him with them, yet remote enough in character and methods of work to constitute a new type. This radical combination can not fail to exert a profound physical, mental, social and moral effect upon coming generations. A natural consequence of this mingling of people of all classes, the strongest and most aggressive of each, and the throwing of every man upon his metal, together with the atmosphere of hope and buoyancy which follows, is that there is a desire for education, for a grasp of the necessary tools of knowledge and power.

OUR EDUCATIONAL FACILITIES.

The common schools of the state are already excellent, better in fact than in many of the older states, because our educators have been able to profit by the experience of those who have gone before, and are not hampered in inaugurating the latest and most approved methods of common school instruction by established custom and narrow prejudice. A high grade of requirements for teachers has resulted in raising the attainments and influence of that vital part of the educational system. A wise conservation of the school lands and educational funds of the state enables the school authorities to pay such salaries as will secure the best talent. Almost all of the schools, even of the remoter country districts, provide at least six months schools, in fact are required to do so to secure any appropriation from the state school fund, while in the majority of cases nine months school is the rule. The village and country schools are becoming well graded. All the towns above twenty-five hundred inhabitants have high schools. These provide excellent English courses, and most of them provide for Latin and at least one modern language. A few provide for Greek, while in mathematics and the sciences are of the grade usual in high schools of the east. Graduates from these high schools are fitted for entrance to the standard colleges of the land. The state makes generous provision for higher learning. There are three well-equipped normal schools,—at Ellensburg, Whatcom and Cheney. The State University at Seattle has a magnificent location. During the year 1902-3 it had a faculty of thirty, and nearly a thousand students, and from every point of view is

worthy to be considered a younger sister of Michigan, Wisconsin and California universities. The Agricultural College and School of Science at Pullman, in the eastern part of the state, is also generously endowed and well-manned, having a force of twenty-six professors and instructors, and during the year past, about seven hundred students.

Besides these institutions maintained by the state, there are several colleges and academies of high grade under private control. Of these, Whitman College of Walla Walla, having collegiate, academic and musical departments, is the best established and best known. During the past year Whitman had seventeen professors and instructors and three hundred and twenty students. The limits of our space forbid giving details in regard to the other private schools, but they may be named as Whitworth College and Puget Sound University, Tacoma; Walla Walla College (Advent), St. Paul's School, Walla Walla; Gonzago College at Spokane, Colfax College at Colfax. In addition to these there are business and commercial colleges at the principal towns. Washington is in the foremost rank of states in freedom from illiteracy, ranking about with Iowa, Nebraska and Oregon in the census reports. It is some just cause for Western pride that this section in general outranks the east in the educational standing of its people. Home-seekers to this state may be assured that they will not be deprived of educational advantages for their children.

LIBRARIES.

As a natural adjunct to the schools we may mention libraries. Here again a foundation has been laid for the best in these important instrumentalities. A state law provides that towns which have devoted a certain amount of books or money to found libraries shall thereafter have a regular tax for the purpose of increasing and maintaining them. Under the operation of this law all of the chief towns of the state have public libraries and reading rooms. In the case of Seattle, which has had a large gift from Mr. Carnegie for the purpose; the library will soon become a superb one. Tacoma, Spokane, Everett, Walla Walla and Whatcom also have collections of books that would do credit to larger and older cities.

NEWSPAPERS.

Perhaps the question of newspapers ranks as of next importance to schools in the minds of most intending immigrants. Washington, like most western states, has a goodly number of newspapers. There are about two hundred and fifty dailies and weeklies published in the state. Those of Seattle, Tacoma and Spokane will compare favorably with those in any other part of the United States. There are several monthly publications, though it is yet too early in our history to expect much in the way of advanced periodical literature.

Washington has not yet come to her own in the matter of a native literature. She is too young to put her thoughts into words. It must be confessed too that the atmosphere is materialistic,—in fact it cannot be otherwise. All in good time we shall have a school of Washington poets, novelists, artists and orators. We are obliged to get the start of nature and our environment first.

CHURCHES.

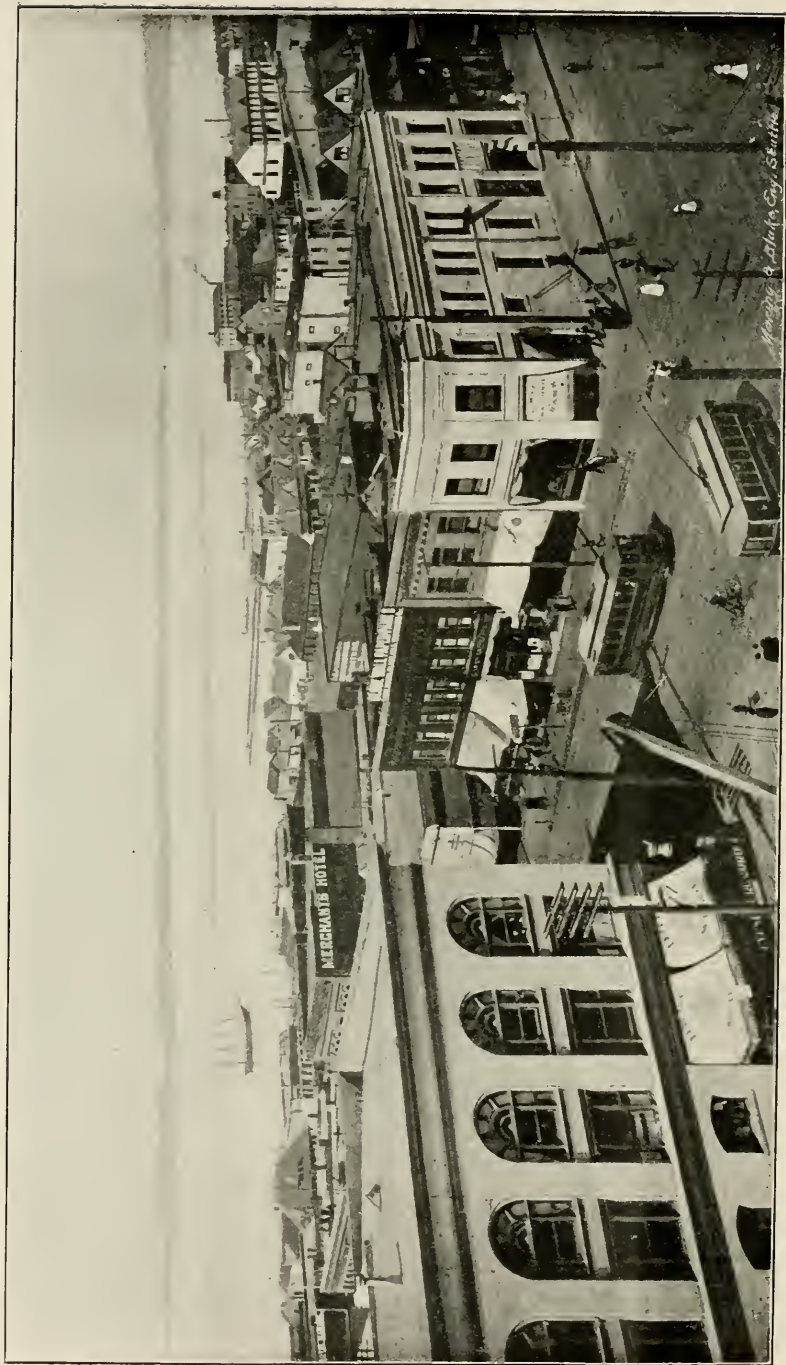
The next question which some home-seeker is very likely to ask is in respect to the churches. The churches are of the usual orders and denominations, perhaps with hardly the support and consideration common in the older states, yet with augmenting power and influence. The atmosphere of the west is not favorable to any kind of ecclesiasticism, but the practical work of the church,—its charities, its educational and reformatory influences,—are well sustained. Strangers who come here with the desire to continue their church affiliations will find in almost all places an opportunity to renew their connections. The idea that vice is rampant, and that person and property are scarcely secure here,—that the “bad man” and the vigilance committee are the common fabric of things,—is a fantastic “pipe-dream” on the part of some newspaper correspondent with an overheated imagination, or some “junketing” tourist on the lookout for “Western types,” which he *alone* has seen. Newcomers to this region need not fear that the morals of their children will be corrupted beyond the point common to most of the places from which they may have come. There is wickedness everywhere in the world, and in the new sea-board cities of this coast there is naturally a gathering together of all kinds

of adventurers and even criminals. This is only a transient and local condition. The operation of the new state law which makes gambling a felony, and state's prison offense, is already having a wholesome effect in ridding the state of a large class of evil-doers.

Perhaps the most striking feature of the human life of this state is the ambition and remarkable capacity for rapid improvement found among the young people. While it is not reasonable to expect so much of outward form and culture in a new region as in an old one long cultivated, yet we do find in our new lands a peculiarly aspiring and singularly improvable body of young folks of both sexes. Perhaps the greatest lack of the genuine western boy is lack of fixity of purpose. The spectacle of sudden fortunes, of business and life changing with kaleidoscopic swiftness leads him to move with feverish haste from one aim to another, and hence he lacks the thoroughness in details which is secured by the greater regularity of older states. This is partly compensated by the greater breadth and exuberance which his very conditions give. His restlessness will be corrected by the discipline of time. Then when we have this fine western independence and animation and originality drilled and cultivated by the steady and regularizing agencies of more fixed and definite institutions, we shall be ready to say to all the world: "Bring on your boys and girls! We are ready for any competitive examination in the elements of the best manhood and womanhood." Of the west Whittier says:

"The rudiments of empire here
Are plastic yet and warm,
The chaos of a mighty world
Is rounding into form."

We have now considered the State of Washington from the three-fold standpoint of its natural productive resources; its commercial opportunities, and human element. We cannot do justice to the theme without a closing survey of those scenic characteristics which in time so profoundly affect the intellect, the character, and the literature, the art and the destinies of a people. For it is unquestionable that "as man thinks so is he." There are things more important than wheat and cattle and lumber, or even than the Asiatic trade. Those characteristics of a country which minister to the building up of the highest



AN EVERETT VIEW

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qualities of taste and refinement, and which lay the foundations of art and literature, cannot be neglected in any estimate of the permanent influence of that country. Judged by this standard, we shall not be extravagant if we accord the State of Washington a place with Greece and Italy as a moulding influence over its inhabitants through its scenic charms. A number of the American states have some special features of beauty and sublimity. New York has Niagara, Colorado has Pike's Peak and the Garden of the Gods, Wyoming has the Yellowstone, Idaho has Lake Pend d'Oreille and Shoshone Falls. California has Yosemite, King's River Canon, and Mt. Shasta. Arizona has the Colorado Canon. Oregon has Crater Lake, Mt. Hood, and the south bank of the Columbia. Where there are so many natural features of world wide fame and of surpassing interest, it may seem ungracious to intimate that one state has more than another. Without making invidious comparisons, therefore, we may content ourselves with saying that Washington shares the lower Columbia with Oregon, and has about four hundred miles of that "Achilles of Rivers" all to herself. Washington has the Archipelago of San Juan, the Olympics, and the myriad inlets of Puget Sound, together with the southern part of the Gulf of Georgia. And besides these great world scenes, to cap the climax of sublimities and include all possible charms and wonders in two great panoramas, nature has given us Mt. Rainier and Lake Chelan. No one state really has a right to have both of these, but Mother Nature was in a bounteous mood about that time, and so we do have them, right or wrong. Anyone who has ever seen these two masterpieces of Nature realizes the inadequacy of words to describe them. Chelan is the less known of the two. It is within the last few years only that the sweet-sounding name Chelan (beautiful water in the native language) has ever been seen by any considerable number of people. Since Robt. Ingersoll, Col. Waring and Clara Barton, and other people of note, have seen it. And since many renowned "globe-trotters" have pronounced it unsurpassed, some say unrivaled among the "show scenes" of Europe or America, an increasing tide of tourists are turning thitherward, and Chelan will soon be one of the places which all who count themselves "traveled" must see. Chelan is a series of stupendous canons

hollowed out in the very heart of the Cascades. The great central canon of the series is occupied by the waters of the lake, sixty-five miles long, and from one to three miles wide. Its waters reach a depth of over seventeen hundred feet in places, are clear as crystal, ice-cold, and full of magnificent specimens of the trout family. Its shores make a study of hues and forms that would put a Titian or a Salvator Rosa into ecstasies of delight. And then the mountain walls! Up, up, up, in places they rise six, seven, eight thousand feet almost perpendicularly from the water's edge. It is a symposium of sublimities that must be seen to be appreciated. As an influence for developing the love of the grand and majestic in nature, Chelan may be considered one of our greatest assets.

Mt. Rainier has long been regarded as the great center piece scenically of the state. It may fittingly be taken as a symbol of our state at this time of such great development and of such popular interest in it throughout the world. There it stands, seemingly on the very verge of the Sound, though in reality forty miles away. Its triple diadem of ice cleaves the heavens and catches the vapors from the illimitable expanses of the great Pacific. The winds hide in the awful canons, and howl and struggle about in the glaciers. The earth must have emptied itself of its stores of molten rock to rear that volcanic height. Upon its sides the snows of uncounted centuries have gathered. The great peak, in a word, has been the gathering point of all forces and all treasures of nature. It has been a recipient; but it has been and is a giver as well. From the aiguilleted crags the fountains of a half dozen rivers issue to turn the wheels of industry, and to transform the barren waste into verdure. From the monstrous mortars and pestles of those mighty glaciers the powdered rock is swept below to make rich the valleys and to provide sustenance for men.

This, the great king-peak, is a perpetual symbol of the process of giving and receiving. Such our state is going to be. It has been receiving from Nature its resources, and from all quarters of the globe, money, inhabitants, industry, hope, effort, attainments. It will transform these and send them back again throughout the world as agencies of power and influence in the industrial, political, and social life of men.

WASHINGTON WEATHER AND CLIMATE.

Showing the Diversity of Rainfall and Its Causes, With Charts of Temperature and Rainfall.

BY GEORGE N. SALISBURY, Weather Bureau Official.

With the most diversified climate of any state in the union, Washington has the most equable weather. By diversity of climate we mean that there are many localities adjacent to each other which differ considerably in many or all of their climatic features, as, for example, in summer heat or winter cold, in the amount of rain or snow, or in the prevailing wind directions or their average force. But by equable weather is meant that the weather does not frequently change abruptly from warm to cold, or cold to warm, or from wet to dry, or in the opposite manner. We distinguish between climate and weather in the following manner: The climate of a locality is immutable, unchanging from generation to generation, and century to century within historic times. The weather on the other hand, except in the stagnant tropics, is ever-changing, from hour to hour, day to day, month to month and year to year throughout certain periods, but ever returning finally to the normal state or average conditions, which are understood as the climate of a region or locality.

Climate is determined by the latitude, the topography, the proximity or remoteness of the ocean, and the direction of the general atmospheric currents over the particular region considered. None of these have changed, except in past geological ages when the topography and the oceanic areas did change by elevations, erosions, subsidences and submergences; therefore, the climate has not changed permanently since prehistoric times, although it may appear to do so from one year to another for a short while. Let us not be led into error by those who assert so confidently that our climate has permanently changed—that it is different from what it was a generation or more ago.

Allowing for those defects of memory, imperfect traditions, legends or records, which so often are responsible for false impressions, it is probable that whatever change has occurred is merely of a local character, caused by the cutting off of forest windbreaks, or is only transitory, so that the old conditions of moisture or dryness, of heat or cold, will reappear after a few years.

Possibility of Cycles.

It is possible, although by no means determined, that there are certain periods, or cycles of three or more years, during which the weather alternately diverges from and approaches the normal or average conditions. The writer has recently called attention to such an apparent three-year cycle in the rainfall of Washington for the past fifteen years, each third year being the year of minimum rainfall. Whether this apparent cycle is accidental—and therefore of uncertain duration—or due to cosmical causes and therefore permanent, it is impossible with available records, and the present stage of meteorological science, to determine. We may rely, however, upon the statement that climate is immutable, for the longer the records the more an examination of them convinces us that the climate is not appreciably different from what it was when they were begun.

Equable Climate of Western Washington.

The opening assertion that the weather of Washington was equable, implied that, as a rule, there are no abrupt and great transitions from warm to extreme cold, or from cool to extreme heat. Storms come on very gradually instead of suddenly, and likewise do warm spells or cool spells. This is especially true of the western section of the state; *i. e.*, the Puget Sound and coast country. At Seattle and other stations there are very few occasions when the difference of temperature between two consecutive days at the same hour of the day is as much as 8° , fewer still when it is as much as 10° . The mean variability or change of mean temperature from day to day is only 3.2° in January, 2.6° in March, 2.9° in May, 2.6° in July, 2.6° in September and 3.1° in November. The range in mean temperature at Seattle, which may be used as a fair average for the Puget Sound country is from 40.8° in January to 64.3° in July or only 23.5° in a year. The greatest daily range from maximum of





PUGET SOUND BY MOONLIGHT.



COURT HOUSE, SPOKANE, WASH.

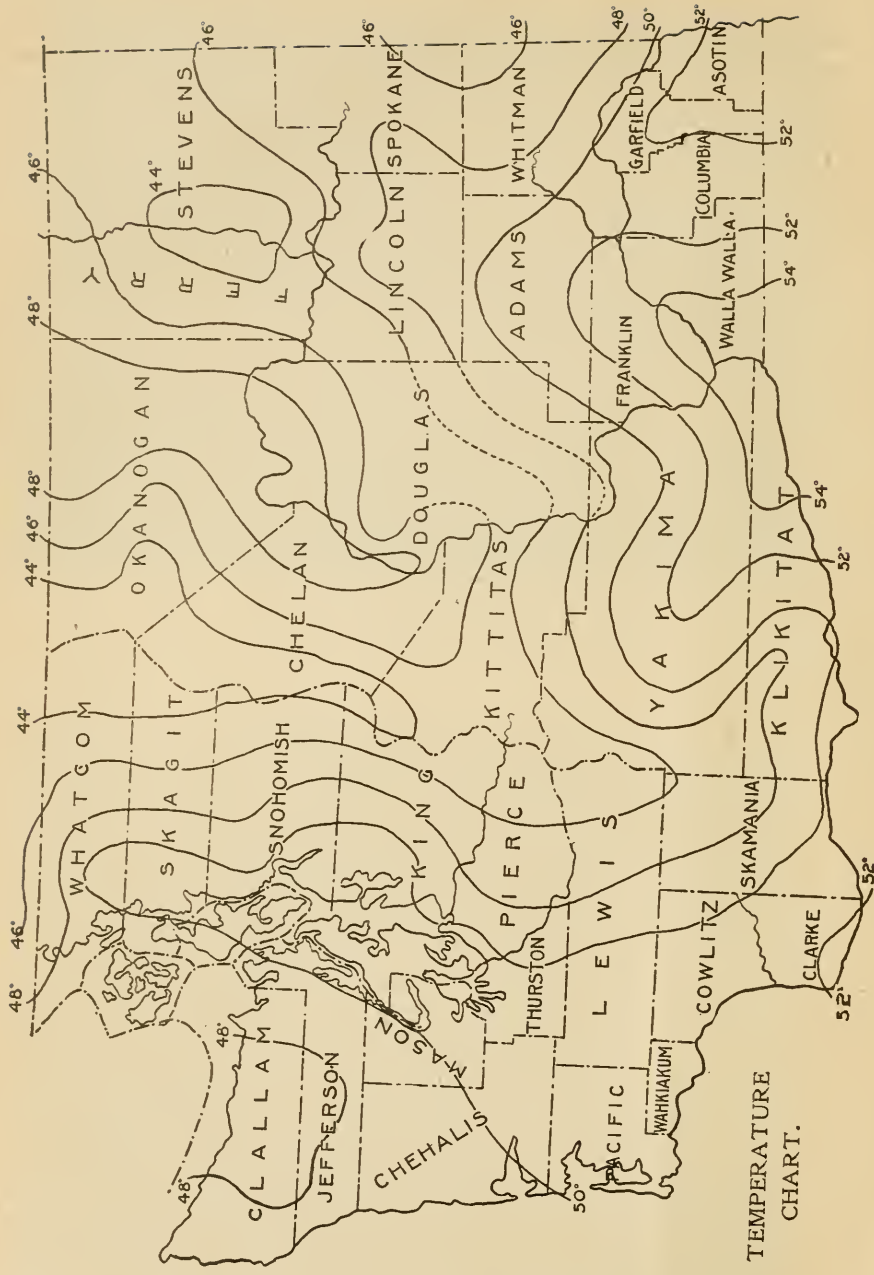
the day to minimum of the same day has never in a single instance been as much as 45° , and never but once was it more than 38° . The average daily range in winter months is 10° , in summer months about 19° .

In the western counties the average daily minimum temperature of the coldest month is 36° , while the average coldest day of the month is 23° . The coldest for any year on record at Seattle was 3° on January 31, 1893. At Blaine 6° below zero was recorded on that date, which is the coldest ever recorded in Western Washington. In Eastern Washington in Stevens county, the coldest locality, 36° below zero was recorded in January of 1899 at Usk, and 30° below at Spokane in January, 1893.

The mean daily maximum of the warmest month, August, is 74° , and the average warmest day of the month 87° . The highest temperature on record at Seattle was 96° on June 8, 1903. On the same day it recorded 100° at Centralia, which is the highest ever recorded for Western Washington. The highest record in the eastern part of the state is 116° in July, 1900. Although as may be perceived, there are much greater extremes of temperature in the eastern counties than in the western counties, still it remains true that cold spells and hot spells do not come on abruptly but approach gradually.

Diversity of the Climate.

The great diversity of the climate of Washington is due to its topography, and in causing the diversity the Cascade mountains, the Olympic mountains and the great plateau or elevated plain of the Columbia play the most important parts. Because of the diversity, it is unsatisfactory to treat of the climate of the state as a whole. To state that the mean annual temperature of the state is 49.2° , the mean annual rainfall 39.25 inches, the mean January temperature 34.2° , the mean August temperature 65.2° , the highest recorded temperature 116° , and the lowest recorded temperature 36° below zero, the mean January precipitation 5.36 inches, the mean July precipitation 0.62 of an inch, is to give information that, although essentially correct, is almost absolutely of no value for any of the several localities of the state which have each a distinct climate of its own. To be at all specific one must treat of each of the cli-



TEMPERATURE
CHART.

matic divisions separately. This has been most briefly and conveniently done by taking the Cascade mountain range as the barrier between the eastern and western divisions of the state, and noting that the western division has a moist, and in many respects, a marine climate, while the eastern division has a continental and dry climate.

A marine climate is a very equable one, the temperature of the adjacent ocean serving to greatly moderate both the cold air of winter and the warm air of summer, making the winters warm although moist, and the summers cool. While in the same latitude the division with the continental climate will have hot, dry winds in summer, with extremes of high temperature, and cold winds in winter, with snow and extremes of low temperature. The mountain barrier protects the western division in winter from the cold land winds, which are northeast to east, and in summer from the hot land winds, which are from the same direction. Singular as it may seem at first, the southerly and westerly winds are the cool winds of summer, and the warm winds of winter. But it is chiefly because of their influence upon the rainfall, or precipitation (in which both rain and snow are included), that the mountain barriers cause such greatly differing climatic divisions.

Origin of Storms.

The precipitation producing storms come originally from off the ocean, where a vast amount of water is converted into vapor by the heat of the sun. When the temperature of this vapor is suddenly cooled below the dew point, the vapor is condensed into small particles of water which collectively form clouds. If the clouds become sufficiently dense, the particles unite until drops are formed so heavy as to fall to the earth against the resistance of the atmosphere. Although there are several circumstances under which vapor may be condensed to produce rain, as by the mingling of the vapor-laden currents with cooler currents, either by their movement into a cooler locality, or by the cooler currents blowing into the moisture-laden area, or the cooling by expansion when the vapor-laden atmosphere ascends, the latter is by far the most efficient and usual cause of rain production. Rain falls in the tropics almost wholly from the effect of ascensional currents. In the temperate and colder lat-

itudes the ascensional movement is in conjunction with a revolution of the mass of ascending air spirally about a vortex.

Why Weather Changes.

Almost all the different phases of weather result from two distinct conditions of the atmosphere: (1) an ascensional, spirally-inward revolution of a mass of air, causing condensation of vapor and collection of clouds to form rain; (2) on the other hand, a descensional, spirally-outward revolution of a mass of air, causing the clouds, if there should be any, to be absorbed; that is, converted into invisible vapor. In the areas where the currents are ascensional and the atmosphere vapor-laden, the barometer reads low; in the areas of descending air, the barometer reads high. In the low barometer area the weather is cloudy or rainy, except at the center; in the high barometer area the weather is clear, except at its borders. When these low areas that approach from the ocean are of decided and marked character, they are considered as "storms." In the summer they are infrequent either in Washington or its near neighborhood, and for that reason the state is remarkably free in the summer season from heavy rains, gales or thunderstorms, and tornadoes are unknown. But in the winter season, or, more properly in the western section, the "wet season," from November to April, there is a succession of storms moving over the state or adjacent to it, from west to east, alternating with periods of high pressure, or fine weather periods, of one or two to several days duration. In midwinter the average track of the storms is along the international boundary, and earlier or later in the season it is somewhat further north in British Columbia. The storms move eastward across the state with a varying rate of progression, which is greatest in midwinter, but usually from 25 to 35 miles an hour. As the storm areas vary from 300 to 1,200 miles in diameter, it takes from twelve to thirty-six hours for one to pass over a given locality which measures the time of duration of each successive storm. It is very rarely the case that rainfall is incessant during such a storm passage; indeed, rain may not be falling during more than one-half to one-third of the time, but cloudiness may continue during two-thirds or three-fourths of the whole time.

Fair Weather Periods.

Following the storm period there comes a fair weather period of twelve to thirty-six or forty-eight hours' duration, during which the air is clear and cool and the thermometer high, showing a downward current. The "highs" that bring fine weather move up from the southwest along the coast usually, the "highs" that overflow from the north or northeast being usually disagreeably cold.

Procession of Storms.

The alternate passage of the high and low areas across the state gives rise to the daily changing "weather," from cloudy and rainy to clear and fine, and vice versa, with changes of wind and temperature to correspond. For instance, a "storm" or field of low barometer appears off the northwest coast at the entrance to the Strait of Juan de Fuca; its presence is shown by low barometer readings along the coast, lowest at Tatoosh island, and by cloudy or rainy weather with brisk increasing to high southeast or south winds. It advances eastward with center over the lower Sound region; the barometer rapidly falls at Seattle, Tacoma, Olympia, Everett and other Sound points, the wind increases from brisk southeast, and becomes high from the south, while the increasing cloudiness gives place to rain. Then as the storm center moves further east, to Spokane or upon that meridian, the wind in the Sound country veers to southwest and the rain becomes intermittent or ceases. If a high barometer area now approaches from the southwest the wind will gradually change to west and northwest, and clearing skies will prevail. Should the high pressure continue to the boundary, the wind will become northwest or north, and as the "high" drifts eastward, twenty-four or thirty-six or even forty-eight hours of fair weather may ensue. Sometimes, however, the low area comes inland at the mouth of the Columbia, while there is an immense area of high pressure over the Canadian provinces, with temperatures far below zero. Then the low area will advance toward Idaho, Nevada or Utah with great rapidity, and north to northeast winds of considerable force will blow over Washington. As the cold winds encounter the moisture-laden air of the "low," snow results, extending from Oregon toward the north and east, until sometimes Ore-

gon, Washington and Idaho are all involved in the same snow storm. There is a greater or less fall in temperature, sometimes, in exceptionally severe storms, the temperature drops to 30° below zero in northeast Washington, to about 10° below in the Walla Walla country, and to zero, or nearly, in that part of Washington west of the Cascades. Such cold waves are not frequent because the Rocky mountains save the eastern part of the state from all but the ones of considerable intensity. The Cascade mountains still further protect the western section, so that the cold waves are extremely rare, only once or twice in a winter are the high areas over the Canadian provinces of sufficient intensity and magnitude to break over the Cascades. Then the north to east winds are quite cold and very unpleasant.

Cause of Varying Rainfall.

A rainy month is caused by the frequency of low area storms passing over or adjacent to Washington. A very heavy down-pour is sometimes caused by a slow moving storm, which will thus sometimes remain almost stationary over a locality for twelve to twenty-four hours. But why is it that the rainfall differs in the different localities if it is all caused by the same storms? This is the influence of topography. In all parts of the earth it has been noticed that the heaviest precipitation is to the windward of mountain ranges, and the lightest precipitation to their leeward. When a vapor-laden mass of air in its onward movement encounters a high range of mountains, it is deflected upward so that the vapor being carried to a great height is cooled by elevation. It is cooled below the dew point, and therefore condensed into water particles, which fall as rain. If the storm is of great intensity it has an abundant supply of vapor, and the precipitation is consequently heavy. On the leeward side of the mountains the precipitation is very much diminished, and it is customary to say that the atmosphere is deprived of its moisture by passing over the mountains. This is only true in part. The most potent reason for the diminished rainfall in the lee of mountains is that the currents descend into a region which has greater capacity for moisture, because nearer the earth and therefore warmer. Consequently much of the moisture of the clouds expands into vapor on reaching the lower levels. When in the onward movement another mountain range

is encountered, the former process will be repeated, and heavy rainfall again result on the windward side of the range, and greatly diminished rainfall on the leeward side.

Heavy Rainfall of the Coast.

The above succession of processes is precisely what takes place in Washington, and accounts for the widely varying rainfall of the different localities. The great reservoir from which all rainfall is drawn is the ocean. When a great vapor-laden storm appears upon our Washington coast. It encounters first the Olympic mountains, or Coast range, and heavy rainfall is precipitated between the range and the coast. The trend of the range is from northwest to southeast; consequently on the northeast side of the range there is a considerable region which has a comparatively light rainfall. It embraces, (as one may see from the map of annual precipitation) the northeastern portions of Clallam and Jefferson counties, and all of Island county and the San Juan archipelago. While over the coast district the rainfall is from 70 to 130 inches annually, in the island district it is only from 22 to 32 inches annually. The precipitation of Aberdeen is 88.5 inches annually, that of South Bend 92 inches, Union City 83 inches, Lapush 85 inches, Neah Bay 107.25 inches, and Clearwater 131 inches. On the other hand, the precipitation at Port Townsend is but 21.2 inches annually, Coupeville 22.5 inches, Anacortes 29.4 inches, Port Angeles 29.5 inches, Olympia 30 inches, and East Sound 31.7 inches. The former locality has the greatest rainfall of Washington; the latter the least rainfall of Western Washington, *i. e.*, Washington west of the Cascades.

Rainfall of Puget Sound Basin.

The eastern shore of the sound, and the region of the upper sound about Olympia, and from there to the southward has a heavier rainfall than the inland district, because the Olympic mountain barrier does not extend far enough to the southeast to intercept the rain-bearing winds from the southwest and south, which pass up through the low country of the broad Chehalis valley. Consequently Olympia has an annual rainfall of 54.1, Grand Mound 52.6, Centralia 46, Tacoma 44.6, Vashon 41.5, Seattle 37.3, Snohomish 46.6, Sedro-Woolley 45.5, Whatcom 31.9, Blaine 43.9. The average number of days with rain or snow is 141 per annum. When the

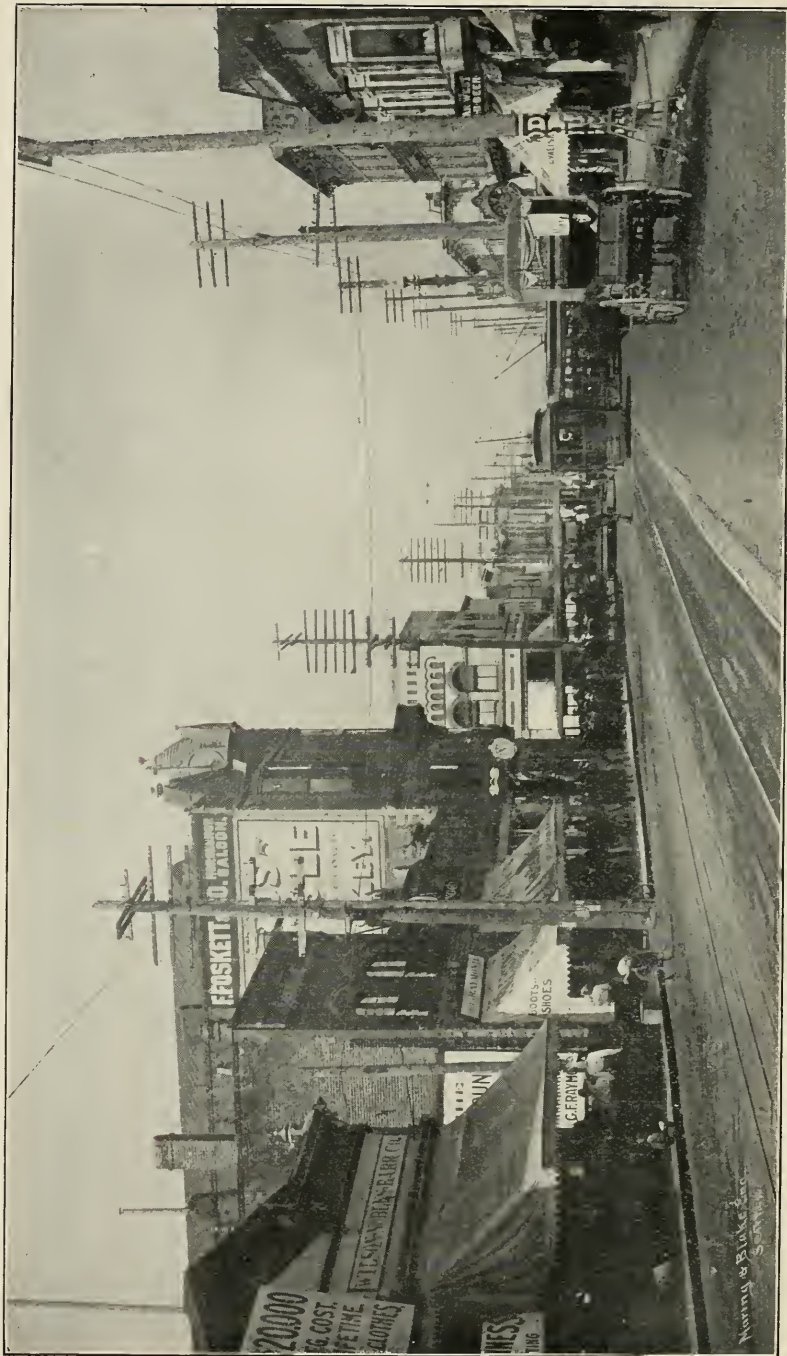
Cascade mountains are reached by the onward movement of the storm, the air currents are again deflected upward, condensing the vapor by the cold of elevation. Consequently the western slopes of the Cascade mountains are another region of heavy rainfall, increasing from the foothills to a height of about 4,000 to 5,000 feet. The following annual rainfalls illustrate this: Mt. Pleasant 59.4, Mayfield 65.9, Ashford 71.8, Snoqualmie 64.8, Stampede 59, Granite Falls 59.4, Monte Cristo 114.7.

Rainfall East of the Cascades.

Immediately after the Cascades are crossed we note a marked diminution of rainfall, the amount becoming less and less as we go eastward on account of the air descending toward the warmer plain, where the air has a greater capacity, (and in this case a very great capacity) for moisture. A few rainfalls given will make this clear. Cle Elum (1930 ft.) rainfall 28.7 inches; Lyle (600 ft.) rainfall 27.3; near Wenatchee (1169 ft.) 15.5 inches; Conconully (2150 ft.) 16.2 inches; Loomis (1200 ft.) 13.7 inches; Waterville (2624 ft.) 16.3 inches; Fort Simcoe (1300 ft.) 12.5 inches; Ellensburg (1577 ft.) 9.5 inches; Centerville (1509 ft.) 13.2 inches; Mothingers (307 ft.) 9.3 inches; North Yakima (1000 ft.) 9 inches; Sunnyside (764 ft.) 6.6 inches; Pasco (360 ft.) 6.5 inches.

We see that it is not wholly the interception of the rain-bearing winds by the Cascade mountains that causes the light rainfall over the plain of the Columbia, but the heat of the sun upon these treeless plains causes rapid evaporation, and a great capacity of the air for moisture. Note the great contrast between the 6 inches of rain over Franklin and southern Douglas counties, and the 114 inches at Monte Cristo, or the 131 inches at Clearwater. At Pasco one-half a foot, at Clearwater 11 feet. This fact has not, to the writer's knowledge, been commented upon, but nowhere else on the American continent is there so great a contrast in moisture in so short a distance.

Toward the east from the Columbia plain the elevation increases: rapidly toward the Blue mountains in the southeast counties, and only gradually toward the east and northeast as the mountains of Idaho are approached. For the above reasons the rainfall increases very rapidly to Walla Walla and Dayton, which have 16.8 inches and 24.9 inches per annum, respectively,



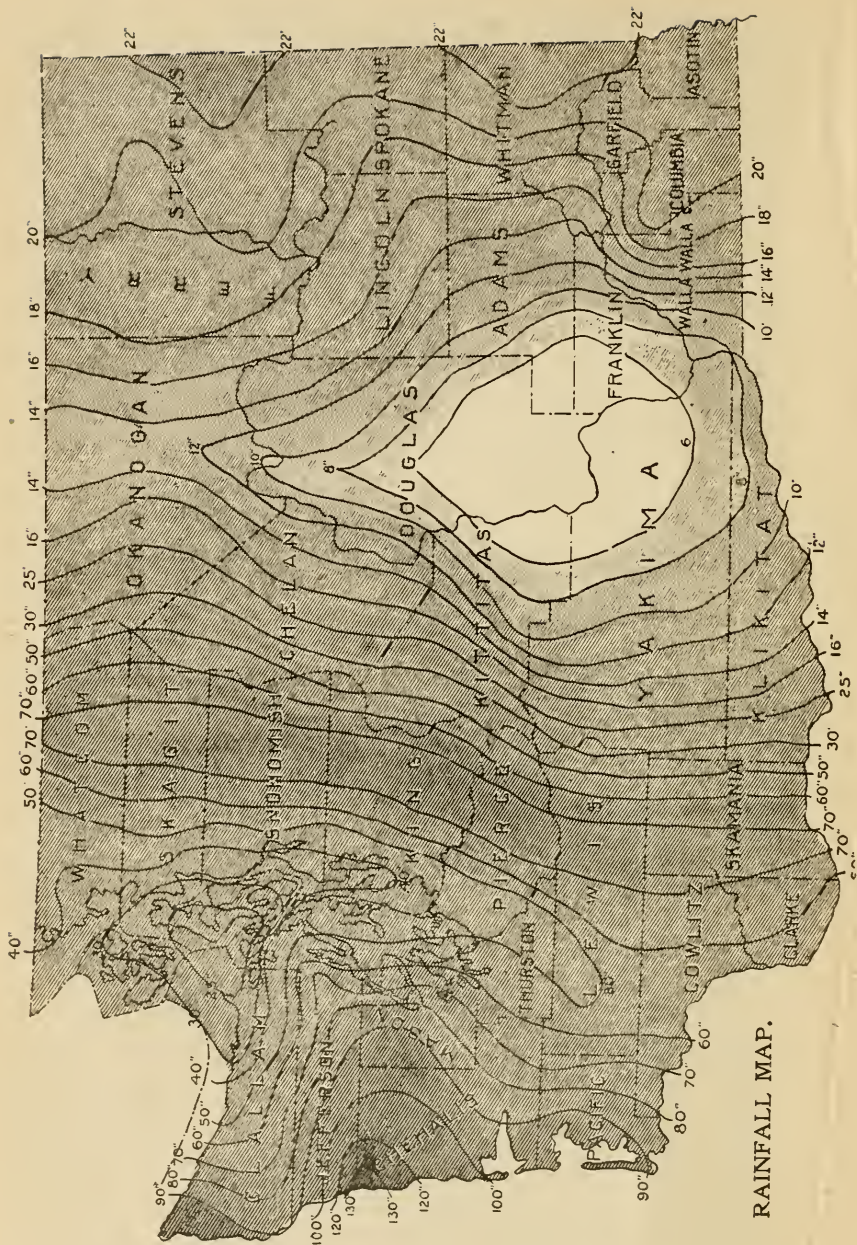
A BELLINGHAM STREET SCENE.
(Whatcom and Fairhaven Consolidated.)

Morris & Blake, Inc.
Seattle, Wash.

and gradually toward the east and northeast; *e. g.*, Lind 11.8, Ritzville 12.4, Wilbur 16.2, Crescent 18.7, Cheney 17.7, Hooper 13.1, Spokane 18.25, Cedonia 20.4, Corville 17.5, Usk 23.2, Rosalia 20.9, Colfax 23.9, Pullman 22.8 inches, etc.

Precipitation Districts.

Enough has now been written to show the great diversity of precipitation over the state, and the reasons for it. Roughly and generally the state may be divided into four precipitation districts; *viz.*, the *wet*, the *moist*, the *dry*, and the *arid*. The first district includes the country west and south of the Olympic mountains, with an annual rainfall of 60 to 130 inches. In it are the western part of Clallam and Jefferson counties, Chehalis, Mason, Pacific, and Wahkiakum counties. The western slope of the Cascades, from the foothills to the summit, has also an annual precipitation from 60 inches upwards, and is therefore a *wet* district. The *moist* district embraces the Puget Sound basin and its extension south through Thurston, Lewis, Cowlitz and Clark counties to the Columbia river. The annual precipitation is from 25 to 60 inches. The island counties, Kitsap and the western portions of Whatcom, Skagit, Snohomish, King and Pierce, are within this district. A small area in Island and Jefferson counties, about Port Townsend and Coupeville, has a precipitation less than 25 inches, and may therefore be classed as *dry*. In the *wet* district hay, oats and roots are the successful crops. In the *moist* district nearly all the grains, vegetables and fruits of the temperate zone can be grown. Oats are a prolific crop, but, except in the dryer parts, the wheat is of too soft a variety to be valuable for flour. The *dry region* is the portion of the state east of the limiting line of 12 inches rainfall, extending to the borders of Oregon and Idaho, where the rainfall reaches 23 or 24 inches annually. It embraces Okanogan, Ferry, Stevens, Spokane, northern Douglas, Lincoln, Whitman, most of Adams, Asotin, Columbia, Garfield and eastern Walla Walla, Chelan, western Kittitas, western Yakima, and western Klickitat counties. The eastern counties mentioned comprise the great wheat belt of the state. Most of the other crops of a wheat region can be successfully raised. In the *arid* region, within the limiting annual rainfall of 12 inches, are embraced Franklin county, western Adams, southern Douglas,



RAINFALL MAP.

eastern Klickitat, western Walla Walla, eastern Yakima, and eastern Kittitas. In this arid region, where crops cannot be successfully grown without irrigation, are the celebrated productive valleys of Wenatchee and Yakima. Where irrigation is possible in these valleys the soil is wonderfully productive, and fruits are remarkably successful because of the hot summers and mild winters, with absence of early and late frosts.

The Wenatchee Valley.

The Wenatchee valley has a climate pretty well indicated by the record of the station near Wenatchee, (8 miles distant) although allowance must be made for its greater elevation and location in the hills. Probably the annual rainfall of the valley is within 12 inches instead of 15.5 inches (that of the station), and the mean annual temperature 49° or 50° instead of 47.7° . About 60 per cent of the precipitation is snowfall, occurring from November to March. Only about 18 per cent of the precipitation occurs during the period from April to August inclusive. The mean temperature of December is 29° , of January 27.5° , of July and August about 72° . The lowest temperature is 6° below zero, the highest 100° F.

The Yakima Valley.

The Yakima valley has an average annual precipitation of from 6.5 to 9.5 inches. Irrigation is an absolute essential for successful crop raising, but the application of water renders the soil of surpassing fertility, and the yield of crops is phenomenal. The raising of wheat is not attempted on a large scale, but alfalfa, which is grown extensively, yields enormous crops, and is cut from three to four times in a season. Root crops thrive, and so also do hops. Fruit raising is one of the leading industries, and the quality of the fruit is unsurpassed.

As in the Wenatchee valley, the greatest precipitation occurs in the winter months, and is largely in the form of snow. At Sunnyside about 60 per cent occurs from November to March inclusive, and from April to August inclusive 1.70 inches or about 25 per cent. The average number of days with rain or snow is 51 per annum. At Sunnyside the mean temperature of January is 30.3° , that of July 71.7° . The highest recorded temperature is 108° in August, 1898; the lowest 23° below zero in November 1896. At North Yakima 5.67 inches, or 65 per cent

of the precipitation, occurs from November to March, and is principally snow, 2.23 inches or about 25 per cent occurs from April to August, inclusive. The average number of days with rain or snow is 62 per annum. The mean January temperature is 29.9°, and that of July is 70.9°. The highest recorded temperature is 108° in August 1897, the lowest 22° below zero in November 1896.

At Ellensburg in the upper part of the valley, and 800 feet higher than Sunnyside, the mean annual precipitation is 9.52 inches, and the mean annual temperature is 46.4°. 6.65 inches, or about 70 per cent of the precipitation, mostly snow, occurs from November to March inclusive, and 1.90 inches, or about 20 per cent from April to August inclusive. The average number of days with rain or snow is 53 per annum. The mean January temperature is 25°, and that of August 66°. Highest 102° August 1895; lowest 29° below zero November 1896. Throughout the Wenatchee and Yakima valleys the prevailing winds are west and northwest.

The Walla Walla Country.

The Walla Walla country is hot in summer and mild in winter. Only the eastern part has ample rainfall. The western part is sandy and barren, except where irrigated. The rainfall of the eastern part, as indicated by the Walla Walla record, is 16.77 inches annually. Although something over 50 per cent of it falls in the winter months from November to March inclusive, yet the remaining months with the exception of August and the latter part of July, have ample showers. The average number of days with rain or snow is 116 per annum. January is the coldest month, mean temperature 30.5°. August is the warmest month, 74.2°. The highest temperature on record is 113° August 1896; the lowest on record is 17° below zero in January 1888. All of the counties south of the Snake river have a climate similar to that of the Walla Walla country.

The Spokane Country.

The Spokane country has a mean annual temperature of 46° to 48°, and an average annual precipitation of about 17 to 21 inches. It is the watershed of the Spokane river and includes Spokane, and parts of Stevens and Lincoln counties. The prevailing winds are southwesterly. The average number of days

with rain or snow is 109 per annum. The mean January temperature is 24.5° , and for July and August 69° . The highest temperature on record is 104° in August 1898; the lowest 30° below zero January 1888. Although a little over one-half of the precipitation occurs from November to March, and is principally snow, rain is well distributed throughout the other months. August has the least rainfall, 0.45 of an inch to 0.70. Frosts occur quite early in the autumn. The plain averages about 2000 feet in elevation.

The Palouse Country.

The Palouse country, famous for wheat production (12,000,000 bushels in 1901), occupies the watershed of the Palouse river from which it derives its name, and embraces within the State of Washington, Whitman county and a part of Adams county. The annual precipitation ranges from 12 inches in central Adams county to 24 inches on the border line of Idaho. The elevation is from 1500 to 2500 feet. The precipitation is heaviest in winter, 60 per cent of it occurring from November to March, inclusive. Showers are well distributed throughout the other months, and droughts are infrequent. The average number of days with rain or snow is 108 per annum. The soil has a remarkable power of retaining moisture, so that crops seldom suffer in the driest weather. The mean January temperature is 32° , and that of August 65° to 70° . Highest temperature 111° August, lowest 19° below zero in January.

The Big Bend Country.

The Big Bend country is a gently rolling plateau, comprising Douglas and western Lincoln counties, elevated 2000 to 2700 feet above the sea, and over 1500 feet above the bed of the Columbia river. It bears more resemblance to the prairies of Dakota than perhaps any other part of Washington. Its climate is cool in summer and mild in winter. Waterville and Wilbur are fairly representative of the climate. The southern portion, including southern Douglas and the western part of Adams counties, has an arid climate; but the northern portion has an annual rainfall of 12 to 16 inches, which with the remarkable soil of that region appears sufficient to produce bountiful yields of wheat and other crops. Waterville has a rainfall of 16.3 inches, and Wilbur 13.3 inches. At Waterville

the January temperature is 22° and August 67° . Highest recorded 102° , lowest recorded 30° below. At Wilbur the January mean temperature is 23.6° , that of August 64.5° . The highest temperature recorded is 102° , the lowest 19° below zero. Although at both Wilbur and Waterville about 60 per cent of the precipitation occurs from November to March, yet showers are well distributed throughout the other months. July and August are the driest ones. The average number of days with rain or snow is 48 per annum. Frosts occur late in spring and early in autumn. The prevalent winds are westerly.

Puget Sound and Coast.

The climatic features of the Puget Sound country have been dwelt upon earlier in this article, and the rainfall of the coast was treated of. The average number of days with rain or snow is 188 per annum. The temperature is remarkably mild in winter very cool in summer. South Bend, Pacific county, which has the warmest winter climate of any place in the state (January mean 41.6° , February 43.3°), has a July temperature of 61.7° , and August 61.8° . Highest on record 102° , lowest 12° above. At Aberdeen, on Gray's Harbor, the mean temperature of January is 39.9° , August 62.1° . Tatoosh Island, just off Cape Flattery, has a January temperature of 41.4° , February 41.2° , August 56.1° . The highest on record is 80° in August 1894, the lowest 7° in January 1893. High south to west winds are of frequent occurrence along the coast in winter.

The coolest summer weather of Washington, and indeed of the whole United States, occurs in Clallam county along the Strait of Juan de Fuca. The annual rainfall at Port Crescent is only 46.28 inches, of which only 4.84 inches occurs from May to August, inclusive. In these four months the mean temperature of May is 50.4° , June 53.7° , July 56.3° , August 56.7° . The highest recorded temperature in May is 85° , June 93° , July 90° and August 93° . The lowest in May is 31° , June 35° , July 35° and August 32° . The locality about Port Crescent, famous for its beautiful lakes, forests and mountains, must as the above climatic features are better known, become the favorite resort of tourists who seek a cool retreat in which to escape the heat of summer.

IRRIGATION.

" Make this valley full of ditches, for thus saith the Lord. Ye shall not see wind, neither shall ye see rain, yet that valley shall be filled with water, and ye shall drink, both ye and your cattle and your herds."

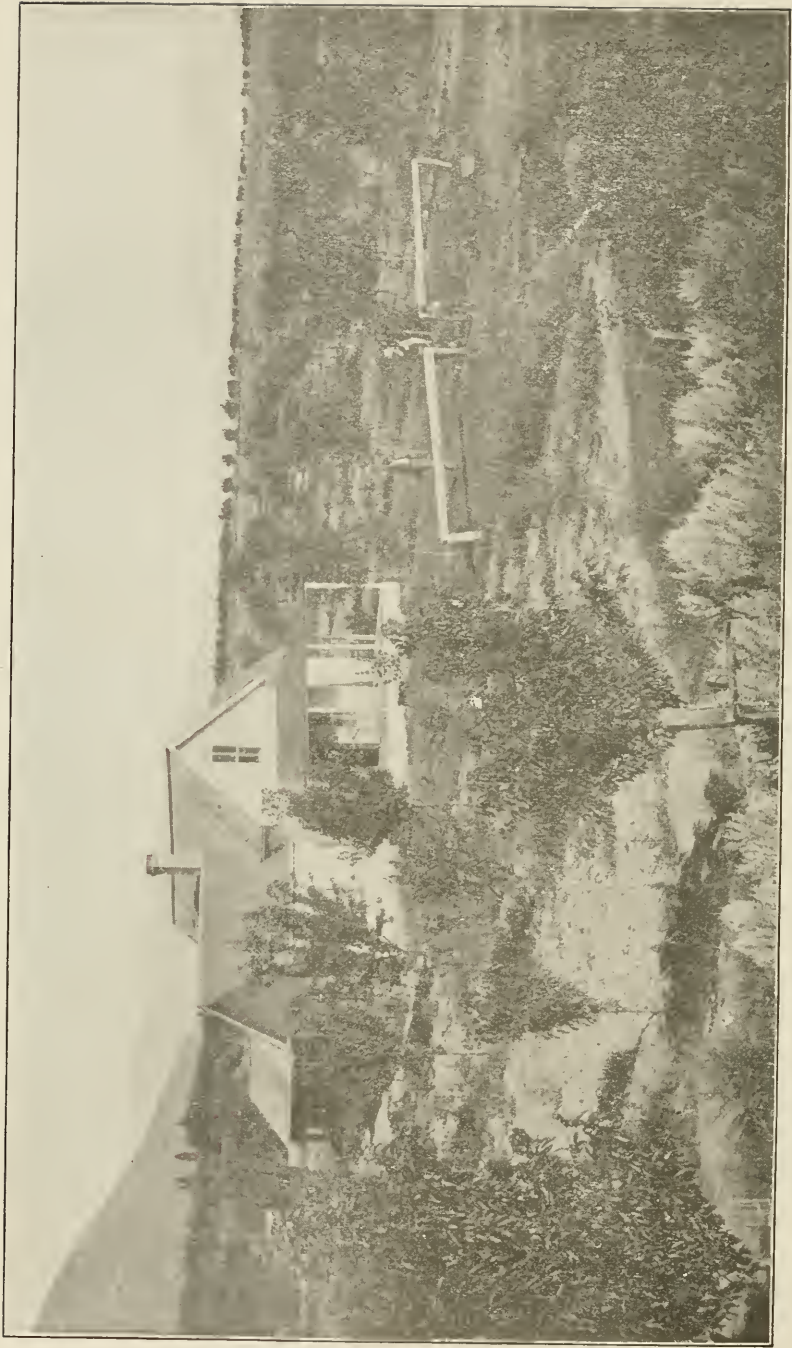
Considering the above command it will be apparent that the subject of irrigation was of early origin. From the time when God sent forth a mist to water the whole earth there has been no substitute for water. If we would form a conception of an earth without water, let us think of the moon waterless, airless, scorching by day, freezing by night, destitute of life. Almost from the dawn of history men have realized that certain regions possessing every natural resource, yet with arid climate, might be rendered productive by irrigation. Hence we find traces in Assyria, Egypt and Persia of gigantic canals, and, logically connected with them, vast cities which in some respects not even those of modern times can rival. Even upon our own continent the remains of immense systems of canals unite with those of cities to attest the former existence of some strange and interesting form of civilization, which was entirely dependent upon the artificial distribution of water. Irrigation is however an undeveloped factor in the older portions of the United States and in the greater part of Europe. The rainfall in England and Germany, from which the vast majority of Americans came, as well as in all the American continent east of about the longitude of western Kansas is ordinarily abundant and seasonable. It was when the golden shores of the Pacific and the mountain valleys of the Rockies began to draw the eager eyes of prospectors and homeseekers that the conception of reviving the arts of the Euphrates and the Nile appealed to the ever active and ingenious mind of the American pioneer.

Salt Lake with its Jordan valley and its Mormans taught the first lessons. Colorado in the vicinity of Greeley, and California at a number of points, Fresno, Pasedena, River Side, San Bernardino, began to learn that the treasured floods of the mountains, the stored up mists of winter, might be conducted by sluiceways and distributing ditches to the lands whose arid summer

denied them the gladness of native vegetation. They soon discovered that water from ditches was just as good as from the clouds. Nay, more, they soon found that the abundance and regularity of water by irrigation, made land subjected to its influence far more productive than that of natural rainfall. And especially was this true from the fact that arid lands usually possess very fertile soil and great heat. As a consequence the irrigated lands developed with a swiftness and yielded results unknown in other regions. The lesson has not been lost on the country. The spectacle of such vast development by irrigation has led to a popular interest which at the last session of Congress resulted in the passage of the irrigation law, one of the most important ever enacted by that body. For from it no one can question that economic and political results of the greatest moment will ensue. This is true not only for the reason that a vast area of otherwise useless land is to be thrown open to settlement but because irrigation calls for intensive farming. Twenty acres of irrigated land will bring as much money as one hundred and sixty put into the ordinary crops. A dense population will naturally arise upon an irrigated region. In the Yakima valley this can already be seen. Where once a single sheep man and then ten wheat men made an uncertain living, now a hundred producers of fruits and dairy products live in comfort and even elegance. Eastern Washington furnishes one of the finest fields for irrigation in the west.

The country bordering the Columbia river in Central Washington in its original state is to all appearance a desert, a hopeless barren waste, forbidding alike to the eye and to the hand of industry. But in the formation of the crust of the Columbia basin the richest soil ingredients were distributed over the surface, and there it has lain waiting for the American Congress to enact the irrigation law and turn the excess of moisture from the Cascade and Rocky mountains upon its semi-arid wastes. Its time has come. In fact already, before the American Congress has caused the turning of a spade full of earth, the pioneers of irrigation have demonstrated the capabilities of the soil and water.

That the reader may form a clearer and more comprehensive view of a system of irrigation in this state let him look at the



AN IRRIGATED FRUIT FARM

map. Locate Kittitas, Yakima, Chelan, Franklin, Walla Walla and Asotin and he will have before him the chief fields in which irrigation has been tested and in which, by reason of topography and climate, it promises most. There are many other localities in which there has been and will be work done with artificially distributed water, but the ones above mentioned may be considered the great natural regions for the purpose. First of all it may be considered that the irrigation works already constructed are of two general kinds; first, those of individual enterprise where some rancher on a creek has run the water out for a dozen or fifty acres of land and then allowed it to return to the stream again minus the part absorbed by his trees, vegetables or alfalfa; and second, the large company enterprises where thousands of dollars have been expended to build extensive canals many miles in length, with laterals and gate-heads, all constructed on scientific principles, with systematic distribution of water, regular maintenance charges, and thousands of acres of land to be sold to settlers, and thousands of settlers to be provided permanently with water rights and water. While of course no one region is exclusively devoted to either of these methods, it may also be noted that in a general way the Snake river bottoms and the various parts of Walla Walla county are the homes of the individual methods of irrigating, and Chelan, Yakima and Kittitas counties represent the large company enterprises. This is the result of course of local topography.

Irrigation on the Snake River.

Look at your map again and you will see the Snake river, a vast stream over a thousand miles long, bursting from the heart of the Tetons in Wyoming and winding sinuously through the great length of southern Idaho, then channeling a mighty canon through the Blue mountains, where it is the dividing line between Oregon and Idaho, finally issues from the steep declivities of those mountains upon the great plains of Eastern Washington in the vicinity of Lewiston. Throughout that part of its course it is sunk two thousand feet below the surface of the great plains. In places it washes directly against perpendicular crags, while in other strips of level valley from a few feet to a mile or more in width, lie between the verge of the

river and the bluffs. It is these narrow bottoms which constitute the famous Snake river fruit lands. The soil of these flats is of the most fertile sort. The average heat is greater than on any part of the Pacific Coast north of about the vicinity of Sacramento, California. Frosts are rare, water abundant, yield of fruits is prolific, almost beyond belief, and orchardists are able to command high prices by reason of getting the cream of early sales of all kinds of delicate fruits. A large number of orchards and farms are strewn at intervals along the hundred and sixty miles of Snake river between Lewiston and the mouth of the river. The farmers depend for water mainly upon pumps by which water is raised from the river. Each rancher has his own pumping station. The power is supplied by an engine or by a current wheel in the river. The expense of the wheel is less, and if a suitable place can be found for its location it is far more satisfactory. The expense of placing a wheel and laying the pipes is considerable, but once in place the subsequent cost is practically nothing. The owner of an orchard on the lower Snake river has a wheel placed in the river, which pumps water enough for about twenty acres. The cost of the entire outfit was about seven hundred dollars. The cost of maintenance is practically nothing. As the supply of water in the Snake river is limitless it will be seen that the opportunities of diverting it at will by the individual rancher are bounded only by his wishes and the number of suitable locations for his wheels and pumps. A number of small streams as the Alpowa, Tucannon and Palouse enter that portion of Snake river, and at intervals along the course of each, fertile belts of bottom land may be found where the individual owner has diverted the water and by means of a gravity system has distributed it over his land. While these places are individually small yet their aggregate amount is very considerable.

The Walla Walla Valley.

Walla Walla valley is perhaps the best illustration of the use of individual ditches by the owners of the lands adjoining. There are four considerable creeks, the Walla Walla river itself, the Touchet, Mill creek and Dry creek. Besides these, there are half a dozen small streams and "spring branches" by the hundred. The very word Walla Walla means "Abundance of

Waters." It was here that the Indians anciently held their great pow-wows. The Walla Walla was in fact an Indian paradise. At many places over this valley the waters of some creek or branch are diverted for an orchard or an alfalfa meadow. The expense of this is nominal and the resulting benefit great. The worth of land is doubled or trebled by the possession of a stream which can be thus used. Thousands of acres in the aggregate, consisting of garden patches, orchard and alfalfa fields are thus caused to bloom and blossom like the rose of Sharon all over the Valley of Many Waters.

Yakima Valley.

When we turn from the Snake river banks and the many-branching Walla Walla to the Yakima and the Columbia, we find different conditions prevailing. Here it is no longer the individual farmer, the company with great capital must enter. The Yakima valley is a vast stretch of fertile land consisting of two great divisions, the upper or Kittitas valley, a level circular body of land twenty miles in diameter, and the lower, extending from the city of North Yakima to the mouth of the river, a hundred miles long and from five to twenty miles wide. Lateral valleys, the Winas, Natchez, Cowiche, Ahtanum, and Toppenish burrow into the mountains and add vast areas to the central valley. The Yakima valley is the very ideal of a place to lay out great irrigating systems. There is an abundance of water in the river, a good fall and the soil is of the finest. It has become the scene therefore of the largest enterprises of this nature in the state. It is not our purpose here to enter much into details or to fully describe all the companies engaged in diverting the waters of the Yakima. There are a number whose area aggregates many thousands of acres in the Kittitas valley centering at Ellensburg. Another large group centers at Yakima, from which thousands of acres in all directions are reached. One of the most interesting things about Yakima it may be noted in passing, is the artesian belt around Moxee, east of Yakima. The Moxee country has the double advantage of both river and subterranean water. Below Yakima there are three great canal systems, besides many small ones. The largest of these is the Washington Irrigation Company,

with its headquarters at Zillah. The water under the control of this company is taken from the Yakima river at a point above Yakima and supplies a region from Zillah to Prosser Falls, about sixty miles long and from five to ten miles broad. Under the ditches of this company is the magnificent Sunnyside district, the location of the Christian Co-operative Colony, one of the most intelligent and broad-minded communities in the West. Land is sold by the Washington Irrigation Company at \$60 an acre with perpetual water right in six year installments. The price of land has risen from \$40 to \$60 within the last year on account of its obvious value. After a year's time a maintenance fee of one dollar an acre is charged. For land already otherwise secured the company furnishes water rights for from \$25 to \$35 an acre. These prices for water rights and maintenance are the usual ones throughout the state. The production of fruit, vegetables and alfalfa is immense through the Sunnyside country. Land in productive bearing is offered for sale at from \$75 to \$200 per acre. When it is remembered that the net yield is often \$100 an acre, sometimes much more, these prices will not seem unreasonable. The markets for the Yakima country seems boundless and unailing. Puget Sound, Alaska, British Columbia, the Philippine Islands, even some towns in Russia, have united to call upon Yakima for hay and fruits. A number of ditches are in active operation on the Yakima below Sunnyside. One at Prosser Falls, another at Kiona provide water for some of the most productive places in the valley. The most important recent canal is the Kennewick, under the control of the Northern Pacific Railroad Company. This waters 12,000 acres on the west bank of the Columbia. It is the warmest region in the state and has peculiar advantages of both river and railroad transportation. It will be found of interest to see the summary of the existing and proposed lines of ditches in Yakima county. This list does not include the Kittitas valley, which is the extreme upper part of the Yakima, and the estimates given are only approximate.

Upper Yakima.
DITCHES IN OPERATION.

NAME OF DITCH.	<i>Acres covered.</i>	<i>Acres cultivated</i>
Moxee artesian wells.....	2,915	2,915
Moxee ditches.....	3,000	3,000
Congdon ditch.....	3,000	3,000
Selah valley ditch.....	5,000	5,000
Wenas creek.....	10,000	4,500
Natchez and Cowiche.....	3,000	3,000
Ahtanum valley.....	13,500	9,000
Natchez valley.....	15,000	15,000
Cowiche valley.....	3,000	1,200
Washington Irrigation Company.....	6,500	6,500
Totals.....	74,915	68,115

PROPOSED DITCHES.

Congdon ditch extension.....	1,200
Selah valley ditch extension.....	1,000
Selah valley high line ditch.....	20,000
Sunnyside high line ditch.....	5,000
Tietan and Cowiche ditch.....	30,000
Totals.....	57,200

Lower Yakima.
DITCHES IN OPERATION.

NAME OF DITCH.	<i>Acres covered.</i>	<i>Acres cultivated.</i>
Reservation:		
Total of systems.....	51,000	15,000
Sub-irrigated lands.....	15,000	1,000
Sunnyside canal.....	64,000	20,000
Prosser Falls ditch.....	2,000	1,600
Kiona ditch.....	3,500	2,500
Kennewick ditch.....	12,000	about 5,000
Lower Yakima ditch.....	8,000	2,500
Totals.....	155,500	47,600

PROPOSED DITCHES.

High line Sunnyside ditch.....	285,000
Prosser Falls extension.....	1,000
Reservation:	
High line from Union Gap.....	100,000
Simcoe and Toppenish.....	7,000
Other lands.....	10,000
Totals.....	403,000

It will be observed that when all the proposed lines are completed there will be 690,615 acres of land under irrigation in Yakima county alone. At present, 230,415 acres of the land of the county is under ditch and capable of being irrigated.

Concerning the water supply for irrigating purposes, which is a matter of vital importance, Major J. W. Powell, director of the United States Geological Survey, said of Yakima county:

“There is more than water enough flowing through Yakima county to irrigate every acre of arable land, and in this respect the Yakima valley is exceptionally and especially favored, as its water supply is superior to that of any other region in the West, with but one exception, Boise, Idaho. People can appreciate what this blessing means when they realize the facts that in states like Arizona and Nevada, if every drop of running surface water was utilized during the irrigating season, there would not be sufficient to reclaim more than one-half of one per cent of the arid lands in those states.”

When it is seen that the waters of the Columbia will be to the other irrigable portions of the state what the waters of the Yakima have been to Yakima county, the vast possibilities of irrigation in this state may be faintly comprehended.

In leaving the Yakima country we may quote a statement made by Ellwood Meade, the government superintendent of irrigation work to the effect that the Sunnyside region contains the finest irrigation proposition, all things considered, in the world. Mr. Meade has visited India and Egypt as the government expert and his statement is entitled to great weight.

Vineland District.

Although the Yakima valley contains by far the largest district for irrigation yet opened in the state, there are two small districts where the process has probably been carried on to a higher degree of perfection and where the possibilities of the system have been demonstrated more fully than even in the best parts of the Yakima. These are the Vineland district on the Snake river in Asotin county, and the Wenatchee district in Chelan county. The Vineland project was the result of suggestions made many years ago by Mr. Charles Francis Adams of Boston at the time of his connection with the Union Pacific Railroad. There was a strip of country of about 8,000 acres, adjoining the Snake river of such location and soil as to make it a most tempting subject for irrigation. The experiment was made and the results can now be seen in what may well be styled one of the model communities of the west. Quite a town,

Clarkston, is located in this district. But the whole of Vineland might be called an extended village. Fruits of every sort and of the choicest kind are found there in their perfection. So marked have been the advantages of Vinland and so anxious have outsiders been to get it that land has risen to a very high figure. Well improved orchards have sold for from \$500.00 to \$1,000.00 per acre. High as the figure seems they have paid good interest on the investment.

The Wenatchee District.

The Wenatchee country has long been known as possessing exceptional advantages for fruit raising. This region is on the west side of the Columbia in Chelan county. The Wenatchee river rises in the heart of the Cascade range, and with the usual impetuous descent of those streams foams on its way to the Columbia through a narrow canon, which in about the last thirty miles of its course widens into a beautiful valley containing some fifty thousand acres. The soil of this valley is of the richest sort, especially adapted to the more delicate varieties of fruit. Apples, peaches, grapes and apricots are especially good. The altitude of the valley is low, being only from five hundred to a thousand feet. The climate is therefore hot and the rainfall scanty, being but six or eight inches annually. The topography of the country is such as to make irrigating canals easy and cheap to construct. Many farmers in this region have their own ditches, but there have been several large enterprises started, the largest being that of the Wenatchee Canal Company. This canal takes out water at a point twenty miles up the Wenatchee river and with its laterals is able to furnish water to the entire valley from that point down. Its cost will be about \$175,000.00. The Wenatchee is one of the best examples of what can be accomplished by intensive farming under irrigation. Experience demonstrates that from five to ten, at most twenty acres of land devoted to fruit trees, berries, or tomatoes, is all that a man can attend to. A family can make a good living on five acres. One man in this district in 1901, sold about \$1,900.00 worth of fruit, vegetables and poultry products on a place of four acres. With such possibilities it is evident that this fair valley of the Wenatchee, (Rainbow valley in Indian legend) will be densely settled and

will become the scene of many and interesting developments in the future.

Contemplated Projects.

The limits of our space forbid describing more of the existing lines of irrigating canals and the country tributary to them.

We must in closing this chapter turn from the present to the future. What has already been done is barely a beginning compared with what may yet be done. Look at the map again. You will see Franklin county as a wedge between the Columbia and Snake rivers. You will see a vast stretch of country in Douglas county running northward. You will also note Adams county. There is over a million acres of land in those three counties which is naturally semi-arid, and yet with water this same land would be of a most productive character. How can water be brought upon it. This is the great irrigation problem at the present moment.

A company has been organized to impound the waters of lakes Katchees and Cle Elum at the head of the Yakima river, and from that added supply provides water for a ditch down the Yakima valley, which shall be carried in steel pipes across the Columbia and debouch upon the plains of Pasco. This, if executed, would solve part of the problem.

Another scheme is to harness the power of Pine Tree Rapids on the Snake river and use it to pump water to a reservoir at a sufficient elevation to command the same region. But both these enterprises are relatively small.

The United States government has withdrawn from entry the most of Franklin and parts of Walla Walla, Adams, and Douglas counties, with the evident design of making an irrigation district of it. There are three gigantic possibilities of accomplishing the purpose. One is to make reservoirs of a series of lakes in western Spokane and Whitman counties and from them conduct water over all of Franklin and considerable part of Adams county. Another is to raise water from the Columbia at the point where the Grand Coulee diverges from it. Conduct that water by gravity down the Coulee to Moses Lake, make a reservoir of that lake, and from it distribute water over the vast region lying below it. Still another plan, much the largest and most fascinating of all, was presented to the state legislature



PART OF HERD OF 17 COWS.
Maintained on $4\frac{1}{2}$ acres near Sunnyside, Wash



A WASHINGTON HOP FIELD.

in 1899, but failed to pass that body. Not improbably this may be the one to receive the favorable consideration of the federal engineers. This plan proposes nothing less than to take water from the Pend d'Oreille river or Clark's Fork, at Priest Rapids in Idaho, carry it by gravity to a point near the city of Spokane, convey it over the Spokane river at a great elevation in steel aqueducts, reach the level on the other side and thence by gravity pass over Adams and part of Lincoln, Douglas and Franklin counties, reaching the Columbia river at Pasco. This gigantic enterprise would probably cost ten million dollars, of which two million dollars would be required to cross the Spokane river. It would irrigate not less than one million five hundred thousand acres of land, and not improbably two million acres would be reached. It is certainly a project worth considering. It would rival the Nile canal of Assouan or the Salt river of Arizona. The fact that such a plan has been proposed gives evidence resourceful minds are at work on the problem and success will sooner or later be achieved. When the reclamation of the great semi-arid region is an assured fact the agricultural resources of the state will be almost doubled.

It is a striking co-incidence, and one which illustrates the marked contrasts that exist in our state, that the greatest rainfall of the United States is found on one side of the state and the greatest possibilities of irrigation on the other side.

Our chapter on horticulture will give facts and figures in regard to the profits of fruit raising on irrigated land. The two chapters may be therefore considered as supplementary to each other.

AGRICULTURE.

The reader of these pages will doubtless have discovered ere this that the strong point of the State of Washington is its variety of products and occupation. Farming and horticulture in all forms, mining, stock-raising, lumbering, shipping, fishing, and manufacturing, each of these finds encouragement here. Yet among them it will no doubt be found that the great basal industry is farming. We have already indicated in our chapter, on the general features of the state its natural divisions. The chapter on climate sets forth the conditions of rainfall and temperature which affect production.

A brief reference to the geology of the state may convey a clearer conception of the manner in which it was made ready for its present age. The northern part of the state is very old belonging to the Archaean age. There the granite, the gneiss, porphyry, slate and marble still remain, as the chief of rocks and there it may be said the chief mines are found. South of about the vicinity of Lake Chelan, the lava begins to overlies the granite. It is evident that at some later time, probably during the Pleicene Division of the Tertiary age, there was a long period of stupendous lava overflows. These were partially from the great vents of the Cascade mountains, which formed the peaks and in part from vast fissures from which they issued in sheets, covering the Columbia plains with a great lake of molten basalt. This great lava plain has been elevated, twisted, gashed with canons, covered with water, blown by winds, draped in vegetation, and thus by the long series of events it has become transformed into the great wheat belt of the state. The greatest change effected in the geological history of the state, after the lava outflow, was glaciation. At sometime, variously estimated at from ten thousand to a quarter of a million years ago, and from some cause, variously interpreted from temporary oscillations of the earth's crust to changes in the ellipticity of the earth's orbit around the sun, there was a period of extreme cold in the northern hemisphere. As a result of this, vast

glaciers descended from the heights of the Rockies, Cascade and Blue mountains. These ground and grooved and ploughed the slopes of the mountains and planed off the hills and bore inconceivable quantities of material down upon the lower land. The shores of Puget Sound and the gravel plains to the south of it were the result of this glaciation.

Still again on account of alternate elevation and depressions of surface, floods from both rivers and sea, soaked and washed and channeled and terraced the surface. Thus by fire and ice and flood, erosion and glaciation, this state was wrought out as a home for men. The geological history of the region renders much more clear the peculiarities of soil upon which the agricultural capacities of the region depend. It accounts for the extreme depth, richness and adaptability to cereal production of the soil of the Eastern part of the state, as well as for the fertile valleys in the Western portion, which consist of alluvium, gradually filled into the gaps left in the great glacial dumps of the Sound shores. It accounts for the flats as lake bottoms and the rolling hills east of the mountains as drifts of volcanic dust and broken basaltic rock.

Perhaps we may best describe Washington agriculturally by sections beginning on the west.

WESTERN WASHINGTON DIVISION.

Practically all of Western Washington was in its original state covered with a dense growth of timber. This must be removed to fit the land for farming. The uplands consist largely of the glacial drifts already described. The northern half of this division has a sandy loam and shot-clay soil, while the soil of the southern portion is more gravelly, interspersed with shot-clay. So genial is the climate, however, that practically all of this soil can be made highly productive. There are many beautiful valleys of the richest alluvial soil, the aggregate area of which is great, and which produce the finest crops. It was known many years ago that good crops could be raised there on properly selected lands. When Dr. John McLaughlin of the Hudson Bay Company was reigning like a Mediaeval baron in the capital city of Vancouver on the Columbia, they had magnificent crops of grain and vegetables and fruits with which to furnish their table and mix with the salmon, venison, duck and

swan which were the common fare in those days. After the American occupation of the country and the establishment of an American fort at the old site, one of the principal aims was to maintain the old garden. General Grant, in his Memoirs, speaks with evident satisfaction, of the delicious vegetables which he helped to cultivate at Vancouver. During the Hudson Bay Company's regime, there were fine farms laid out on the Cowlitz and Nisqually. In 1844 Michael T. Simmons, with seven others, slashed the woods around Budd's Inlet, and in the vicinity of the present town of Tumwater and near Olympia sowed the first American seed on the west side of the mountains. In 1848 the Cowlitz began to yield a tribute to the first American farmers. For many years lack of railroad facilities prevented any large influx of farmers and it could be said that agriculture had attained little importance, but with the railroad construction of the 80's and the vigorous inflow of population Washington's great latent resources of all sorts leaped into life. Attention began to be paid as never before to the various branches of agriculture both on the east and on the west of the mountains.

The strong points of the west side from the agricultural standpoint are horticulture and dairying, and these will be considered elsewhere. Of distinctly farm products, oats, hay, hops and vegetables are the great crops. As already outlined there are many fertile valleys, beginning with the Cowlitz on the south, which enters the Columbia river, then the Chehalis which enters Gray's Harbor; then tributary to Puget Sound, the Nesqually, Puyallup, White River, Snohomish, Snoqualmie, Skagit, Stillaguamish and Nooksack. Each of these has tributaries and there are many smaller streams which we need not name. The valleys of these streams vary from a few hundred yards to ten or fifteen miles in width. In their native state they are densely timbered. When cleared they are adapted to every species of crop possible to a temperate climate.

Oats.

The tide flats of the Swinomish, Skagit and Nooksack rivers probably beat the world in oat production. One hundred and seventy-five bushels (?) have been raised on a single acre. One hundred and fifty bushels is not an uncommon yield for

entire fields, while the average in the well developed districts is stated to be one hundred bushels. To attain these results, however, much labor is required. Land must be cleared or dyked and drained as the case may demand. A Snohomish, Swinomish, Skagit or Nooksack oat field is a wonder. A farmer with such a place can snap his fingers at the world. He is independent. As might readily be supposed, improved land of this sort commands a high price, bringing from \$100 to \$200 in the market. It is worth every cent of it. The market for oats is unfailing and easily reached. Unimproved land in these valleys can be bought at moderate prices. All the way from \$10 per acre up, according to location.

Hay and Barley.

The same conditions which make oats such a successful crop apply to hay and barley. The humid climate and the fertile soil of these valleys, make grass of a peculiarly succulent nature. Timothy, red clover, white clover, orchard grass, Italian rye grass and red top are produced in great quantities. Timothy and red clover may be considered the standard crops for hay. The yield is heavy, not uncommonly four or five tons to the acre. As in the case of oats, the great advantage to the Western Washington farmer is the nearness and certainty of his markets. Both by rail and boat he has the markets of the world at his door. The hay farmer does not need to incur quite so great expense in clearing as does the producer of oats. Many acres, especially of the lighter timber and brush land are simply slashed and burned, then sowed with timothy and red clover, and the stumps gradually decay so that within a few years the land can be easily cleared. In the meantime a very excellent pasture can be secured all over such a slashing, while on its better parts hay of the finest quality can be made. The hay farmer in Western Washington has the greatest kind of opportunities before him after the initial expense of clearing has been met.

Hops.

Next to oats and hay the hop crop of Western Washington is of greatest importance. The cultivation of hops was first commenced in the Puyallup valley by Mr. Ezra Meeker, who was the pioneer in that line. The culture of hops has extended

from that locality to the White River valley, the Skagit, Snohomish, Chehalis and the other fertile valleys of the west side. The yield of hops is the greatest in average amount here of anywhere in the United States, and the hops are of the finest quality. The market, however, is so variable as to make the business of hop growing somewhat uncertain. The price for a number of years past has varied from seven to thirty cents. Hop picking time, both from the Indian and white point of view is the most picturesque phase of farm life in the state.

EASTERN WASHINGTON DIVISION.

Topography.

Eastern Washington is already cleared by nature. It is ready for the plow. As pointed out elsewhere this vast region between the Cascade mountains and the eastern boundary of the state, and between the mountains of the north, the Columbia river and the Oregon boundary on the south—a region of about thirty-five thousand square miles in area—is naturally divisible into two sections, different in lay of land and methods of treatment, though possessing essentially the same qualities of soil, and climates different rather in degree than in kind. The soil of the entire section, embracing the counties of Yakima, Kittitas and Klickitat on the west side of the Columbia, and Douglas, Lincoln, Spokane, Adams, Whitman, Franklin, Walla Walla, Columbia, Garfield and Asotin on the east side of the great river, is primarily a volcanic ash of most extraordinary strength in all the ingredients of plant life. The soil varies in depth according to the age of the volcanic outflow which produced it. In places, boring for wells has shown soil 200 feet deep. Railroad and wagon-road cuts show essentially the same soil for twenty, thirty or forty feet. There are, however, in many places considerable areas of land where the rock crops out, as well as others where rock is reached at a depth of two or three feet, showing a comparatively recent volcanic flow. Again the soil varies in the amount of loam, according to the rainfall. In those parts of Franklin, Yakima and other counties where the rainfall is but six or eight inches a year, the soil is a volcanic dust. In Whitman, Spokane and the foothill belt of Columbia and Walla Walla counties, where the rainfall reaches

fifteen to twenty-five inches, a great blanket of loam, from generations of decaying grasses has been superimposed upon the original lava dust, while at points in this region there is a stiff clay. Wherever the rainfall reaches ten inches or more a year there is a magnificent growth of bunch grass, the grass that originally made the great pastoral age of the country. With less than ten inches of rain, sage brush, grease wood and chaparral represent the struggles of mother nature on the verge of inanition. Now in regard to the lay of the land and the method of cultivation it may be said that the semi-arid soil in the central part of the state is in general more level than the Rainier zone of the western side. Irrigation is the only means of securing crops in this part, and with irrigation the most extraordinary results may be attained. This section also has much less altitude, being from three hundred to one thousand feet above sea level, while the eastern part is a rolling plateau, cut across with deep sunk river valleys and coulees, and having an altitude of from one thousand to three thousand feet. In general the greater the altitude the greater is the rainfall, the deeper the loam, the higher the bunch grass and the richer the soil. Analysis of this volcanic soil shows it to be the highest in elements necessary to wheat and other cereals of any soils of this continent and equalled only by the soil of the Nile and Euphrates valleys.

PRODUCTS.

Such in general outline is the land itself, now for some view of its agricultural products.

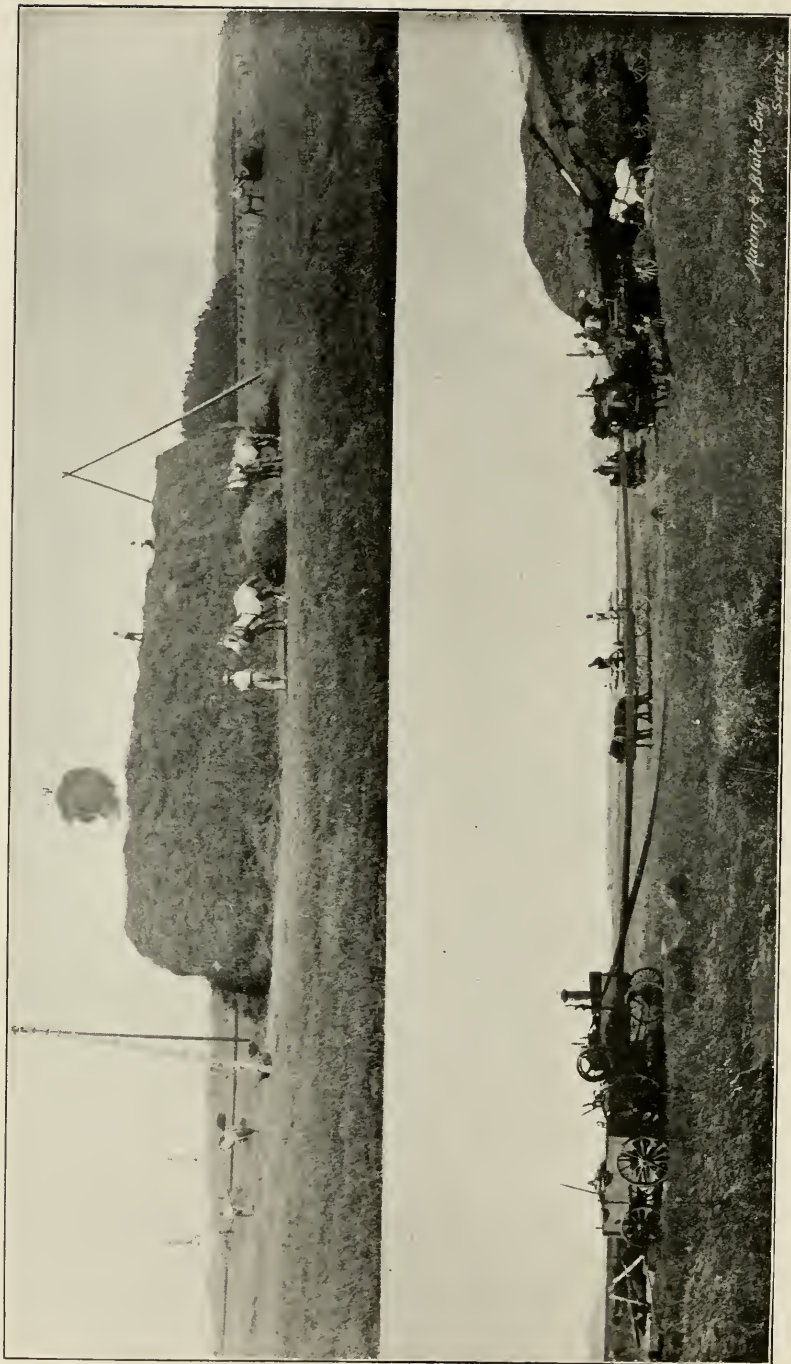
Irrigable Section.

Our attention will first be directed to the Kittitas valley which is the upper part of the Yakima river country. This is a region of scant rainfall and irrigation is necessary. Some wheat is raised here, but it seldom pays to raise wheat by artificial moisture. Hay is the great crop. The Kittitas valley being over two thousand feet above sea-level and so near the perpetual snow-fields of the Cascade mountains is quite cold and though fruits and vegetables are of the finest quality the range of variety is not so great as in the lower lying lands down the river. We find in the Kittitas valley some timothy of fine quality, but alfalfa seems to be the great hay material, and when we name

alfalfa we name the great staple of the hay product of Central Washington. At the lower side of the great flat circle which composes the Kittitas valley,—evidently a former lake bed,—is a rough canon through which the Yakima river makes a turbulent course. At the end of this canon the rugged hills give way and the various valleys which compose the superb Yakima valley unfold. This is the seat of the greatest irrigation systems of the state. Alfalfa hay and hops are the chief products outside the domain of horticulture. Alfalfa produces three crops a year and not infrequently four. The aggregate for the year is very generally as much as from six to eight tons per acre. We cite one or two instances of returns from alfalfa and other hay to show the productiveness of this region. John Chisholm cut 64 acres from which he secured 560 tons of choice alfalfa, for which he received \$3.30 per ton in the stack; gross receipts \$1848.00 expense of harvesting 75 cents a ton. This makes a yield of $8\frac{3}{4}$ tons to the acre, and a net return of \$22.31 per acre on the 64 acres cut. Last year a rancher named Albert Wright sold his last year's crop of timothy and clover for \$40.00 per acre in the stack. Mr. F. E. Thompson of Toppenish reports a yield of 39,000 pounds of hops from a twenty-four acre field. Cost of raising was 7c a pound; selling price 11c, leaving him a net profit of about \$1500.00 on his hops. He also raised 1100 sacks potatoes and 120 tons of hay. For the potatoes he received \$21.00 a ton and for the hay an average of \$4.00 per ton in the stack.

Hay and Grass Lands.

The discussion of hay in the Yakima country is pertinent to all the drier portions of Eastern Washington. It is highly important for the reason that the great demand for hay throughout Alaska and the mining and lumbering regions both of British Columbia and the northern states of the Rocky mountain belt, seems likely to make the production of hay for export, almost a rival of the wheat business. It is fitting therefore at this point to present some conclusions in regard to the most profitable sorts of grasses in this region. These conclusions are drawn in part from the observation of many farms and in part from the experience of those conducting the experiment stations connected with the Agricultural College, and the one near Walla



STACKING HAY.—THRRESHING OATS.
Western Washington.

Mooring & Blake, Eng.
Sept. 12

Walla maintained jointly by the U. S. Government and the O. R. & N. Railway Co. The last named was under the general charge of Col. Judson, of the Railway Service, and Prof. Leckenby, of Washington, D. C., well known as one of the foremost authorities on forage and hay grasses and plants in the country. During the time that the station was maintained about seventy varieties of plants were cultivated. These were of many sorts from almost all the known regions of the earth. They were handled in such manner as to test variations in soil, climate and culture. Through the courtesy of Mr. Richard McGahey, who had local charge, we are able to present the following data. Of the seventy varieties tested, brome-grass, several varieties of alfalfa, Bermuda grass, several varieties of fescue and timothy seem to have yielded the most important results.

Brome-Grass.

Brome-grass has remarkable drought resisting qualities, and is perhaps the most suitable that can be used in the semi-arid or dry portions of the state. When properly set and established it will withstand extremely low temperature without injury, and will successfully stand the heat of a long dry summer. It starts very early in the spring, and remains green late in the fall. It will stand almost any amount of pasturing without serious injury. Its peculiarity is that it forms very thick bunches of leaves close to the ground, making a heavy sod, and is without many seed heads. The first years growth yields a good crop of hay, but it is distinctly a pasture grass.

Italian Rye-Grass.

Italian rye-grass grows rankly and is most excellent for both pasturage and hay. It is more greedily eaten by stock than almost any other grass. It requires a good amount of moisture, and will probably succeed well on irrigated lands. It yields enormously, sometimes eight tons an acre. It gives a fine color to butter, and every dairyman who has a piece of moist fertile land set in this grass can be assured that he will have pasturage from March to Christmas in this state.

Fescues.

This is a suitable grass for either hay or pasture, and is well adapted to all parts of the state. There are two varieties—

Meadow Fescue and Tall Fescue, the latter of which is perhaps the more valuable of the two. It holds sod a long time in low lying lands and is best adapted for cultivation on rich soils.

Bermuda Grass.

Bermuda grass makes one of the densest and rankest growths of any species. It possesses also the peculiarity of jointed roots and when the roots are broken or cut they immediately sprout again at the broken point. For this reason it is almost impossible to exterminate it on moist land.

Timothy.

Timothy is the old reliable for wet and heavy land, but it is not suited to light land even with irrigation. In the heavy soils of the foot hills and the river bottoms where the rainfall is large timothy is as conspicuous in the east of the mountains country as in the west. In the Sunnyside district as well as in other parts of the irrigated zone timothy does well with plenty of water provided the soil is of a substantial character. Timothy hay sells better than any other kind, and this fact, together with its great yield makes its one crop a year nearly as profitable as the three crops common to alfalfa in the irrigated regions. It is best to sow red or Alsike clover or red top with timothy, as it grows in tufts. For the best quality of hay it should be cut when in bloom.

White Clover.

This is one of the grasses that seems to be indigenous to the soil of Western Washington. Wherever there is a "burn" or clearing it springs up of its own accord. It is a hardy species of clover that grows in almost every part of the United States. It is a most valuable grazing plant and is to the pasture what red clover is to the meadow. The stock will fatten on it and to the bee keeper it is very valuable, being one of the best honey-making plants. It will grow on almost any character of soil, cold or warm, wet or dry, sterile or fertile. It is a perennial plant which gives it a great advantage over red clover for purposes of pasture. Analysis has determined its highly nutritive qualities. It is said to be higher in this than blue grass.

Red Clover.

Red clover is well known as a valuable feed plant both for grass and hay. It grows most luxuriantly in Western Wash-

ington, where it is generally sown with timothy, orchard grass or Italian rye-grass. It also does well in the irrigated portions of Central Washington, as well as in those parts of the wheat belt where the rainfall is 20 inches or more. It is one of the best soil improvers and for that reason more of it should be grown. There is never too much time and money spent in raising it, for in addition to its value as a forage and hay grass it adds fertility to the land upon which it grows.

Alsike Clover.

This is of particular interest to dairymen, as well as all stockmen of the state. This plant is suited to the low-lying, wet soils where red clover will winter rot. Red top and Alsike go together like timothy and red clover. There are many farms in the state, particularly in Western Washington, on which are wet spots where red top and Alsike would do well, which are otherwise worthless to the farmer.

Alfalfa.

With the other chief sorts of plants disposed of we come to alfalfa, and we have reserved it to the last for the reason that the results both of experience and experiment seem to leave alfalfa in possession of the field as the great hay and pasture plant for the central and drier parts of Eastern Washington. Two principal kinds have been tested at the Experiment station, the Chilian, the common sort, and the Turkestan, the seed of which was brought here by Prof. Leckenby. Turkestan alfalfa has been thoroughly tried at the Experiment station and it has been raised on a larger scale by Mr. Milton Evans of Walla Walla. It differs from the common alfalfa in having finer stalks and in leafing out thicker nearer the ground. For these reasons it makes rather better hay. Either the Turkestan or Chilian alfalfa is remarkable for the great length of its roots and the extraordinary tenacity which it has to life. In digging wells the roots are often found five, ten, fifteen and often twenty-five feet down. It seems to start out at once to tunnel for water. It is next to impossible to kill it. Even if the roots are dug up and chopped to pieces and left lying on the surface they will sprout if at all wet or given any sort of a chance. For this reason a common method of improving alfalfa is to go over it with

a disk-harrow, to all appearances cutting it to pieces. The severed roots sprout rapidly and it becomes better than before. Alfalfa is adapted to light or heavy land or to much or little moisture. In most parts of the dry Yakima or Columbia river flats it will grow without irrigation. It will however furnish but one cutting for hay when it is not irrigated. With suitable irrigation it can be cut three and four times in one season besides furnishing some pasturage.

Alfilaria.

The government quest for some sort of plant or grass that will grow in the driest regions will no doubt continue until successful. It is interesting to note that some sorts of plants seem to be trying the experiment on their own account and it is likely will sometime furnish valuable results. The Mexican alfilaria, commonly called "filaree" by Americans, and one of the most frequent plants in the San Joaquin valley of California, seems to be spreading with great rapidity in Central and Eastern Washington. It is very nutritious, is eagerly sought by stock and seems able to suck its nutriment out of as nearly absolute aridity as anything that grows. It may solve the dry land problem for us yet on its own account.

WHEAT LAND.

We now proceed to consider wheat lands. The physical history and characteristics of the upland wheat-belt of this state have already been discussed. A few words in respect to the history of grain production will, we believe, be found of interest to the reader. This is especially so for the reason that the newcomers of the present day are likely to meet similar experiences and to entertain similar impressions to those of the pioneer wheat raisers of this section. To make this remark clear let us observe that no country in the world more belies itself at first sight than Eastern Washington. These vast rolling prairies, dry and yellow, seem even with the bunch grass waving on them to be the next thing to desert. There are, it is true, limited tracts like the valleys contiguous to the streams, which delight the eye with almost tropical verdure, but we speak now of the nature of the general tracts on which the greater part of the millions of bushels of wheat are raised. We must warn the

homeseeker against first impressions, they are uncommonly erroneous.

The first comers here were chiefly from Eastern states, mainly Illinois, Ohio and Missouri. They assumed without discussion that the uplands would be used simply for grazing and so they confined their agricultural operations to the bottoms. These had been tested many years before. Marcus Whitman, the hero and martyr of Waiilatpu, had raised abundant crops of wheat, oats, corn and vegetables on the meadows of the Walla Walla as long ago as 1840. He, as well as Rev. Henry M. Spalding, of the Nez Perce Mission, had set out apple trees, and these still stand, but it was in the bottom lands only. No one seriously considered the highlands. As a pioneer has expressed it, the early settlers seemed determined that the uplands should not produce grain. Nevertheless, one here and another there were experimenting farther and farther away from the streams. Wheat also was being produced in large amounts and of fine quality on the bottoms. In 1866 there were five flouring mills in the Walla Walla valley, and 7,000 barrels of flour were exported, mainly to the mining regions of Idaho. In 1872, Dr. N. G. Blalock being convinced upon an examination of soil and rainfall that the higher lands would raise wheat, secured 2,200 acres of land south of Walla Walla, and after a year or two of expensive work of bringing the land into thorough cultivation, he astonished the old timers with a crop of 31 bushels of wheat to the acre. In 1881 the entire tract yielded an average of $35\frac{1}{4}$ bushels to the acre. The body of one thousand acres yielded 51,000 bushels. This yield was made the subject of a careful measurement and reported to the agricultural department, where it stands to-day as the largest yield for a thousand acre field ever reported. There was no longer any question about wheat raising in Eastern Washington. Farms appeared rapidly on the bench and foothill lands. Even then, however, every new section had to fight for the recognition of the fact that it could raise wheat. While it was conceded that the heavier lands near the mountains could raise wheat, yet many farmers were skeptical as to the lighter lands of northern Walla Walla, western Whitman and Adams counties. The Northern Pacific Railroad company sold thousands

of acres of their land around Ritzville, in Adams county for seventy-five cents an acre. The county was by many considered worthless except for grazing as late as 1896. Now Adams county has passed Walla Walla and almost rivals Whitman as a grain producer, while Lincoln county claims to have surpassed her. Ritzville in Adams county is the largest initial wheat shipping point in the United States.

Douglas county—the northern half—though somewhat inaccessible to railway shipping points, is not excelled by any portion of the state in the production of wheat and other crops.

The Washtucna country in eastern Franklin county and the Horse Heaven region in Klickitat and Yakima counties are taking their place in the line of wheat producing sections.

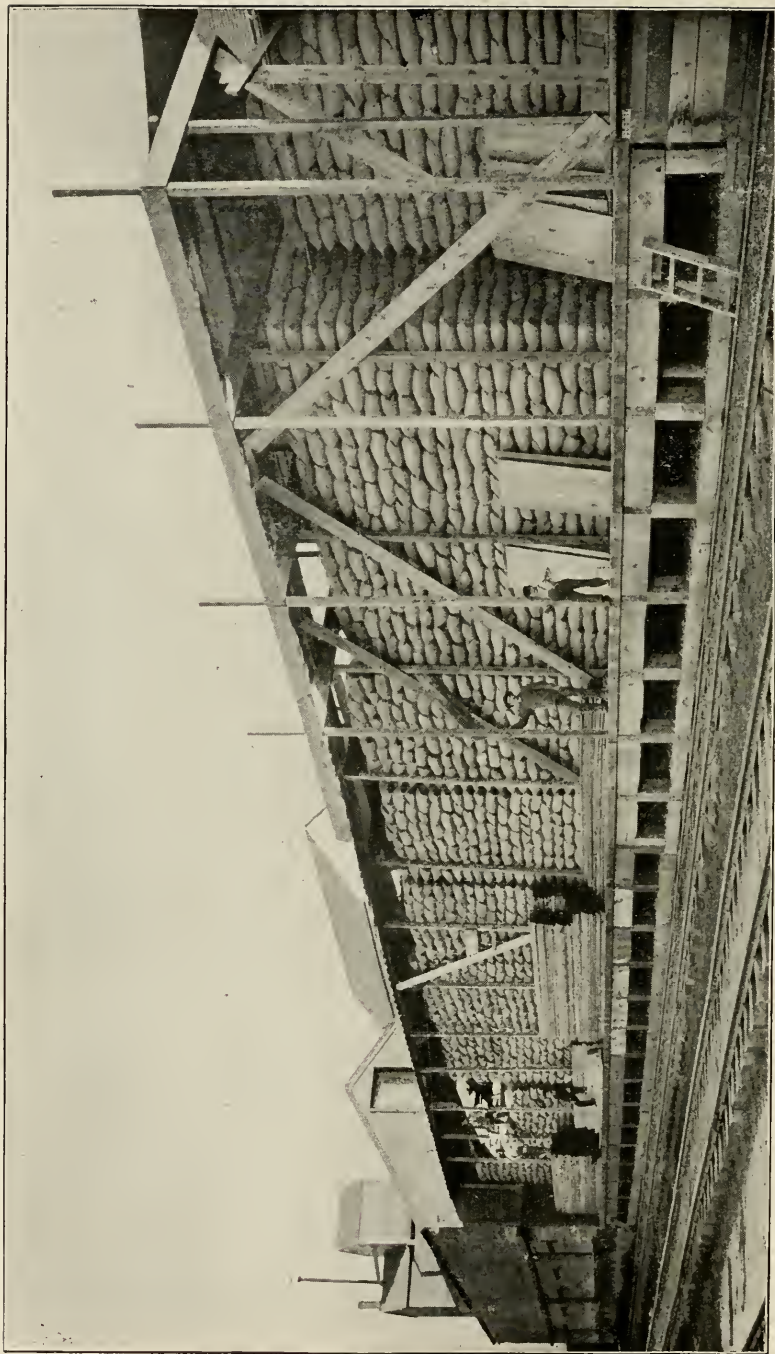
The widened area and the increased productiveness of our grain belt is due mainly to two things. These are, first, a better knowledge of the way to cultivate the land and improved facilities in doing it; and second, the aquirement of varieties of grain better adapted to the soil and climate. As to the method of cultivating the soil, it seems to be proven that this land needs to be compacted rather than loosened. They first plow the sod in the spring, very shallow, three or four inches, just skimming the surface. This is allowed to decay during the summer, and is sometimes put in the following fall, though no one expects much from that first crop. After that it is plowed deeper and harrowed repeatedly. These repeated harrowings first loosen and then compact the ground. It then seems to retain the gathered moisture of the winter and the wheat secures a stable seed bed. Except in the foothill belt the land is usually summer fallowed every other year. Some farmers claim that summer fallowing one year in three is sufficient to give the land the needed rest. In the older regions a rotation of crops is beginning to be practiced with success, corn or potatoes being planted for an alternation. In general, however, little has been done towards variety and alternation of crops. Wheat, first, last and all the time is the rule.

There is much yet to be learned in this section in regard to mixed farming. In the foothill belt of Walla Walla, Columbia, Whitman and Spokane counties, where farming has progressed for a considerable time and where farmers have acquired wealth,


something of the variety of the older states is beginning to appear. Fine stock, poultry, dairying, fruit raising, gardens, alternate with grain field. Here too may be seen attractive, often elegant homes, handsome grounds, fine carriages and all the manifestations of the attainment of that finest American product, the independent, well educated, open-handed, free-souled rural class, which always has been, and doubtless always will be, the backbone of American institutions. The best traditions of Western New York, Southern Pennsylvania and Central Ohio will be preserved in Eastern Washington. It may be further said, in connection with the methods of cultivation employed, that the process of preparing the ground for seeding, as well as harvesting the crop, has been considerably cheapened and improved by the use of labor-saving machinery. The wheat farmer has the best that the world affords in the way of machines. The plowing is done almost entirely by gang plows, and traction engines are employed more or less in the level sections for drawing these. The rolling disk harrows or cultivators are largely used, as well as the most improved sorts of toothed harrows and cultivators. Seed is sown almost entirely by means of drills. Harvesting is done mainly with headers and threshers. Ordinarily three headers and one threshing machine will work together. A day's cutting and threshing for such an outfit will be from fifty to seventy-five acres. Since there are more headers than threshers, a good deal of grain is stacked. In portions of the wheat belt the great combined harvester and thresher is employed. The Holt Harvester Manufacturing company has placed a large number of these machines in the wheat country within the last four or five years. They cut the standing grain at one end and drop full sacks of wheat at the other, the processes of cutting, threshing and sacking being combined in the one machine. Cutting a twenty-foot swath they are able to harvest the grain on from fifty to seventy-five acres a day. Such a machine is a matter of amazement to a stranger. Some idea of its size and general make up can be gathered from the cut herein given. The use of traction engines to draw these harvesters is coming into vogue and in time will no doubt to a great extent supplant the use of horses. The practical farmer will no doubt be interested to learn the expense

of producing wheat. This is variously stated by different authorities in different sections all the way from twenty to thirty-five cents a bushel, including interest on farm, stock, machinery, plowing, sowing, harvesting and delivering at warehouse. An experienced grower of wheat has made a careful estimate on a crop of ten thousand bushels, harvested from four hundred acres. The total cost, including every conceivable item of expense connected with the raising of the wheat was \$2,674, making a total cost per bushel of something over twenty-six cents. It is well established, however, that it costs less to raise wheat in the dry belt than in the foothill zone, since the greater rainfall makes a rapid growth of weeds, which have to be kept down by repeated harrowings. In the dry belt wheat can be raised at a cost of about twenty cents a bushel. From these estimates it can be seen that the wheat farmer who receives fifty cents a bushel for his grain can do reasonably well, and when wheat is at its present price of from sixty-five to seventy cents a bushel, the wheat farmer makes money.

The next most important query in regard to wheat raising is, what varieties are produced. On account of the mild climate of winter and dryness of spring fall wheat is usually preferred to spring wheat. The prime favorite is Blue Stem. This yields well and commands the highest price. Little Club is raised extensively and yields better, but it is worth from two to six cents a bushel less. Red Chaff yields better also, but has a bad habit of shattering. These three staple sorts are really spring varieties, and if a cold spell comes without snow, as sometimes happens, they freeze out easily. In Whitman and Spokane counties these varieties are more ordinarily raised as spring wheats. The genuine fall varieties which have been thoroughly tested at the experiment stations are the Fifes, especially Jones' Fife, Turkey Red, and Russian White Winter No. 2. Jones' Fife seems to be the favorite of these. It does not command so good a price as the Blue Stem, but it does not winter kill, it stands draught well, and it yields heavily. The Turkish Red wheat does not yet seem to have attracted great interest, but it yields heavier crops than any other sorts unless it be the Russian and it is of excellent quality. The Russian is also an admirable variety and it is hoped by many that it may prove to be the kind



OVERFLOW WAREHOUSE, PULLMAN, WASH. !

Such scenes are common in all of the wheat producing counties of Eastern Washington,  U.S. DEPARTMENT OF AGRICULTURE

for the semi-arid belt. The Mararoni wheat, which has been raised a good deal of late in the Dakota, has been the subject of some experimenting in Eastern Washington, and also promises great results for the dry belt.

In general terms we may say that Little Club is the wheat for heaviest rainfall. Red Chaff next, and Blue Stem next, while the Fife, Turkish, Russian and Macaroni are the varieties for winter wheat in the most arid regions.

We have been seeming to assume that wheat and hay are the only agricultural products in Eastern Washington worth naming. Such is not the case, for though they are greatly in excess of others there is the capacity as well as the constant tendency to a more diversified type of farming. Barley is the next most important crop to wheat and hay. It is raised in part for brewing purposes and in part for feed. It is of the best quality. The same conditions essentially govern its production as control in the production of wheat. Dayton, in Columbia county, and Pomeroy, in Garfield county, are the most important barley shipping points. The yield of barley per acre is very heavy, running from fifty to over a hundred bushels, and many farmers find its production more profitable than wheat.

Rye is a valuable crop on dry lands though not extensively grown.

Oats are produced to some extent in Eastern Washington, though not on so large a scale as on the west side of the mountains. There is not rain enough for the best results in oats.

An increasing acreage is being devoted to corn and while it is conceded that it is not a staple crop of this country it is being raised to a considerable extent and yields better than was supposed before the trial was made. We have reports of this crop having yielded 40 bushels per acre, which is a fair crop for the corn growing states of the middle west. The best results are from seed raised in this state, and our farmers will no doubt improve upon the seed until a variety is developed from which a reasonable crop will be assured. The peculiar advantage of this crop is that it can be grown on summer-fallow, and the cultivation necessary to the growth of the corn is just what is necessary to prepare the land for wheat. As an alternate crop it will be of great value.

AGRICULTURE.—Table No. 1.

Farms and Farm Acreage: 1860 to 1900.

Year.	No. of Farms.	No. of Acres in Farms.	Improved.	Unimproved.	Per Cent. of improved Land.
1900	33,202	8,499,297	3,465,960	5,033,337	40.8
1890	18,056	4,179,190	1,820,832	2,358,358	43.6
1880	6,529	1,409,431	484,346	925,075	34.4
1870	3,127	649,139	192,016	457,123	29.6
1860	1,330	366,156	81,869	284,287	22.4

Between 1860 and 1900 the number of farms increased rapidly, the rate for the decade 1890 to 1900 being 83.9 per cent. The total area in farms is over twenty-three times as great as it was forty years ago, and more than double that of 1890.

U. S. Census Bulletin, "Agriculture."

Table No. 2.

Table No. 2. presents a summary of the principal statistics relating to farm products and property for each census year beginning with 1860.

Year.	Value Farm Property.	Improvements and Buildings.	Impliments and Machinery.	Live Stock.	Products.
1900	\$144,040,547	\$115,609,710	\$6,271,630	\$22,159,207	\$34,827,495
1890	100,724,970	83,461,660	3,150,200	14,113,110	13,674,930
1880	19,655,044	13,844,224	958,513	4,852,307	4,212,750
1870	6,362,235	3,978,341	280,551	2,103,343	2,111,902
1860	3,508,155	2,217,842	190,402	1,099,911	.....

In the last decade the gain in the total value of farm property was \$43,315,577, or 43.0 per cent. The increase in value of land, improvements and buildings was \$32,148,050, or 38.5 per cent; in that of machinery, impliments, etc., \$3,121,430, or 99.1 per cent. The increase in the value of live stock was 57.0 per cent, and the value of farm products for 1900 was 154.7 per cent greater than for 1890.

Table No. 3.

This table gives a report by counties of the number and acreage of farms, values of specified classes of farm property, and the value of farm products, June 1, 1900:

COUNTIES.	Total Number of Farms.	Total Acres.	VALUES.	
			Land and Im- provements (except buildings.)	Buildings.
The State.....	33,202	8,499,297	\$99,310,510	\$16,299,200
Adams.....	783	494,452	3,557,850	328,100
Asotin.....	533	128,649	1,211,990	202,230
Chehalis.....	600	85,214	1,502,310	327,890
Chelan.....	457	94,135	882,480	129,200
Clallam.....	395	52,667	722,890	154,790
Clarke.....	1,873	192,737	3,641,380	756,340
Columbia.....	706	262,239	3,849,390	414,560
Cowlitz.....	751	108,888	1,230,290	325,520
Douglas.....	854	421,804	2,097,150	281,350
Ferry.....	62	15,767	199,700	26,100
Franklin.....	61	101,547	91,860	8,860
Garfield.....	521	257,826	2,074,230	250,980
Island.....	254	30,705	679,990	142,780
Jefferson.....	212	29,289	452,300	133,840
King.....	1,785	280,558	5,622,640	1,172,740
Kitsap.....	446	29,132	489,940	155,790
Kittitas.....	699	199,085	1,838,980	328,590
Klickitat.....	1,080	404,947	2,679,200	458,430
Lewis.....	1,786	224,755	2,773,130	692,800
Lincoln.....	1,911	903,997	8,282,450	839,920
Mason.....	274	33,636	445,270	128,380
Okanogan.....	506	80,196	666,830	127,190
Pacific.....	342	51,936	621,880	179,620
Pierce.....	1,455	146,030	2,599,340	783,060
San Juan.....	338	50,981	725,200	186,440
Skagit.....	889	87,151	2,956,110	599,200
Skamania.....	239	39,851	306,870	63,730
Snohomish.....	1,024	97,507	2,248,440	532,690
Spokane.....	2,911	655,372	8,373,130	1,514,330
Stevens.....	1,132	215,041	1,602,190	361,550
Thurston.....	665	128,822	1,375,410	336,300
Wahkiakum.....	247	32,564	469,680	130,090
Walla Walla.....	1,029	651,847	10,955,090	1,053,830
Whatcom.....	1,262	119,434	2,154,160	645,190
Whitman.....	3,081	1,168,817	14,805,620	1,768,070
Yakima.....	1,293	542,376	4,237,340	622,440
Colville and Spokane*....	351	21,969	141,340	43,280
Lummi*.....	28	4,489	95,720	15,340
Makah*.....	7			
Muckleshoot*.....	30	3,252	52,630	6,830
Quenault*.....	24	3,841	20,990	3,320
Swinomish*.....	7	234	9,320	
Tulalip*.....	30	4,296	41,080	6,670
Yakima*.....	269	41,242	526,720	60,840

*Indian reservation.

Table No. 4.

The following table is an exhibit of the changes in cereal production since 1859:

TABLE 4.—ACREAGE AND PRODUCTION OF CEREALS: 1859 TO 1899.

PART 1.—ACREAGE.

YEAR.*	Barley.	Buckwheat.	Corn.	Oats.	Rye.	Wheat.
1899	122,298	96	10,483	126,841	3,077	1,088,102
1889	51,551	27	9,583	65,089	1,763	372,658
1879	14,680	106	2,117	37,962	518	81,554

*No statistics of acreage were secured prior to 1879.

PART 2.—BUSHEL PRODUCTION.

1899	3,641,056	1,865	218,706	5,336,486	44,954	21,187,527
1889	1,269,140	430	156,413	2,273,182	19,188	6,345,426
1879	566,537	2,498	39,183	1,571,706	7,124	1,921,322
1869	55,787	316	21,781	255,169	4,453	217,043
1859	4,621	707	4,712	134,334	144	86,219

THE WHEAT CROPS OF 1900 AND 1902.

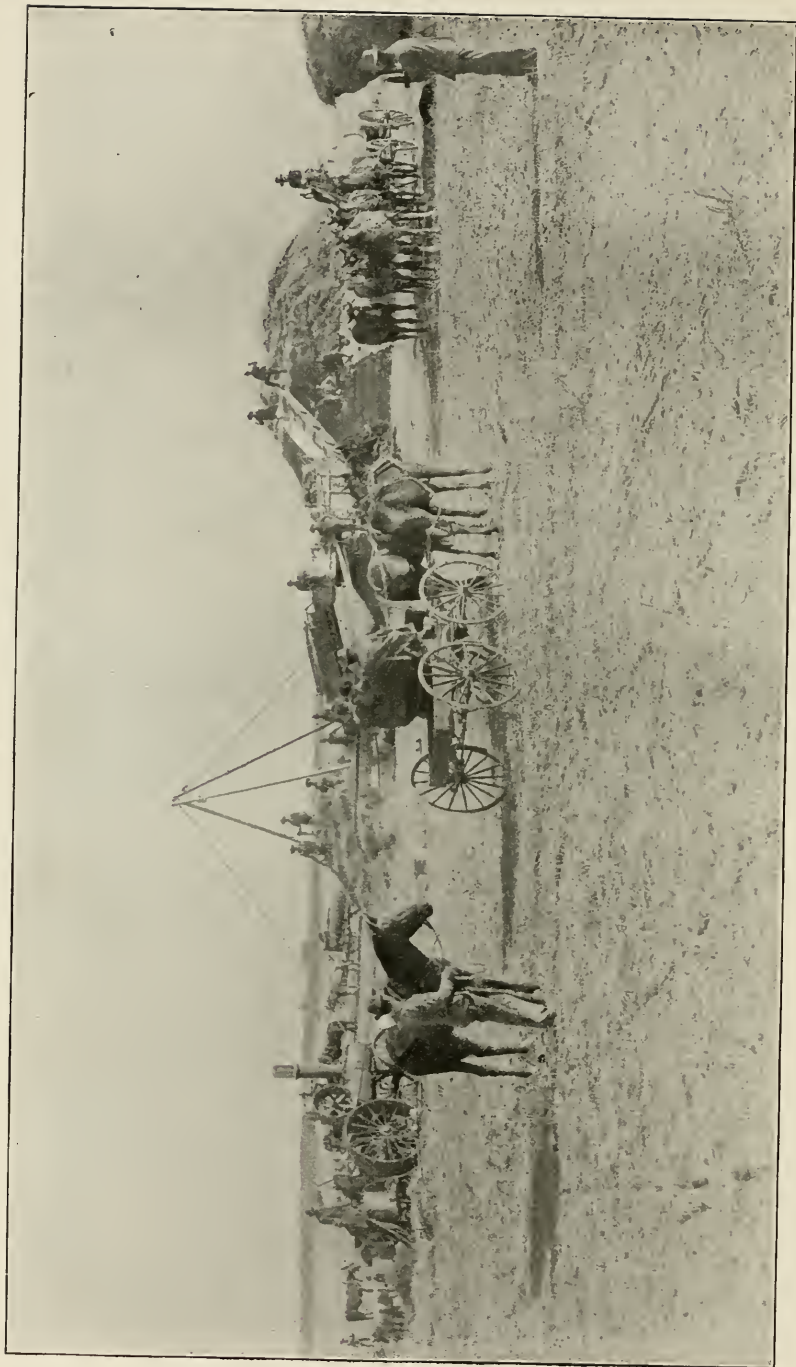
We herewith append "Exhibit B", from the State Grain Commissioner's report for the year 1902. This report shows the number of cars of different grain inspected at each inspection point for each month from Sept. 1st, 1900 to August 31st, 1901, and also from Sept. 31st, 1901 to August 31st, 1902, and is as follows:

EXHIBIT B.—Table No. 5.

Showing number of carloads of different kinds of grain inspected at the several inspection points each month from September 1, 1900 to August 31, 1901.

TACOMA.

DATE.	Rye.	Oats.	Barley.	Wheat.	Total.
September, 1900.....	3	10	91	1,737	1,841
October, ".....	1	17	39	1,447	1,504
November, ".....	3	38	19	849	909
December, ".....	1	11	20	1,728	1,760
January, 1901.....		9	12	1,538	1,559
February, ".....		4	7	704	715
March, ".....		10	7	709	726
April, ".....		5	1	650	656
May, ".....		34	.....	809	843
June, ".....		15	1	454	470
July, ".....		5	3	343	351
August, ".....		10	13	362	394
Totals	8	177	213	11,330	11,728



HARVESTING AND THRESHING SCENE.
Common to Douglas and Other Eastern Washington Counties

SEATTLE.

DATE.	Rye.	Oats	Barley.	Wheat	Total.
September, 1900.....		34	35	670	739
October, ".....	1	36	45	571	653
November, ".....	2	50	35	317	404
December, ".....		15	22	324	361
January, 1901.....		12	31	139	182
February, ".....		15	23	221	259
March, ".....		14	37	160	211
April, ".....		14	7	99	120
May, ".....	1	28	11	129	169
June, ".....	1	19	3	167	190
July, ".....	1	8	5	66	80
August, ".....		19	25	120	164
Totals	6	264	279	2,983	3,532

SPOKANE.

September, 1900.....		22	10	148	180
October, ".....	1	22	12	228	263
November, ".....		9	25	120	154
December, ".....		4	15	155	174
January, 1901.....	1	9	11	191	212
February, ".....		13	4	136	153
March, ".....		10	14	114	138
April, ".....		20	6	158	184
May, ".....		15	11	201	227
June, ".....		8	1	93	102
July, ".....	1	11	6	72	90
August, ".....		17	6	91	114
Totals	3	160	121	1,707	1,991
Totals from all.....	17	601	613	16,020	17,251

Table No. 6.

Total receipts in bushels (Approximate).

CITY.	Rye.	Oats.	Barley.	Wheat.	Total.
Tacoma.....	6,600	244,260	200,220	10,650,200	11,101,280
Seattle.....	4,950	364,320	262,260	2,784,020	3,415,550
Spokane.....	2,475	220,800	113,740	1,604,580	1,941,595
Totals.....	14,025	829,380	576,220	15,038,800	16,458,425

EXHIBIT B.—Table No. 7.

Showing number of carloads of different kinds of grain inspected at the several inspection points each month from September 1, 1901, to August 31, 1902.

TACOMA.

DATE.	Rye.	Oats.	Barley.	Wheat.	Totals.
September, 1901.....		77	49	1,393	1,519
October, ".....		99	103	1,825	1,927
November, ".....		79	21	2,117	2,217
December, ".....	1	32	11	2,136	2,180
January, 1902.....	1	64	17	2,424	2,506
February, ".....		63	4	1,564	1,631
March, ".....		35	15	1,185	1,235
April, ".....		27	4	518	549
May, ".....		100	25	779	904
June, ".....		129	20	499	648
July, ".....		149	13	178	340
August, ".....		16	16	372	404
Totals.....	2	870	298	14,990	16,060

SEATTLE.

September, 1901.....	1	100	63	722	886
October, ".....		135	73	1,128	1,336
November, ".....	1	27	29	837	894
December, ".....		10	14	454	478
January, 1902.....		43	29	462	534
February, ".....		29	24	262	315
March, ".....		32	22	232	286
April, ".....	1	25	27	193	246
May, ".....		44	17	203	264
June, ".....	1	98	18	189	296
July, ".....	2	23	26	124	175
August, ".....	1	38	35	142	206
Totals.....	7	604	377	4,948	5,916

SPOKANE.

September, 1901.....		24	6	201	231
October, ".....		19	19	160	198
November, ".....		18	18	171	207
December, ".....	2	36	20	102	160
January, 1902.....		19	23	110	152
February, ".....		11	8	146	165
March, ".....		11	18	146	175
April, ".....		9	10	130	149
May, ".....		9	7	179	195
June, ".....		6	11	100	117
July, ".....		17	4	111	132
August, ".....		11	.....	27	38
Totals.....	2	190	144	1,583	1,919
Totals from all.....	11	1,664	819	21,521	23,895

Table No. 8.

Total receipts in bushels: (Approximate.)

CITY.	Rye.	Oats.	Barley.	Wheat.	Total.
Tacoma.....	1,650	1,200,600	280,120	14,090,600	15,572,970
Seattle.....	5,775	833,520	354,380	4,651,120	5,844,795
Spokane.....	1,650	262,200	135,560	1,488,020	1,887,430
Totals.....	9,075	2,296,320	770,060	20,229,740	23,305,195

WHEAT CROP ESTIMATE FOR 1903.

As will be seen the Grain Commissioner's report only shows inspection at Tacoma, Seattle and Spokane, and as we are in possession of reliable reports, showing that the percentage of wheat carried by the O. R. & N. Railroad company out of the state, together with the local consumption of our Eastern Washing flour-mills, is equal to the amount of grain carried by the Northern Pacific Railway Company. As none of this grain passes through the above named inspection points we should add to the 23,305,195 bushels approximately 15,000,000 bushels, making the total output of the state for the crop season of 1901, 38,505,195 bushels. It must be remembered of course that 1901 was a favorable crop year in this state. Estimating the crop for this year, 1903, at 70 per cent of that amount we would have 26,813,336 bushels. We have reason to believe that the crop for this year will exceed that amount, and while the crop is not so large as in some former years the advanced price will fully make up to our farmers its equivalent in value.

The Test of Value.

Table No. 9.

Value per acre of farm products in six states for the year 1901:

Product.	Kansas.	Iowa.	Nebraska.	Minnesota.	Ohio.	Wash.
Wheat.....	\$10.92	\$ 9.75	\$ 9.23	\$ 7.74	\$10.86	\$13.67
Oats.....	8.00	10.73	7.33	10.91	12.28	16.63
Barley.....	7.15	11.09	6.56	11.61	12.70	17.83
Potatoes.....	34.56	26.64	32.34	24.30	30.40	54.52

The above is taken from the U. S. Department of Agriculture Year Book for 1901.

It will be seen from Table No. 4 that the amount of wheat raised in this state increased from 1,921,322 in 1879 to 21,187,527 in 1899. The Government Year Book for 1901 reports a yield of wheat for Washington of 34,518,968 bushels or an average of 29.1 bushels per acre for the entire state. This is an average of three bushels per acre more than nearest competitor. We have reason to believe that the Government estimate for 1903 was considerably short of the actual crop as stated in our remarks on report of State Grain Commissioner.

CONCLUSION.

Grain production in the State of Washington is still in its infancy. From the tables herewith printed may be seen the rapid advancement in this regard, and it is not too much to expect that Washington will one day equal if not surpass all competitors in the matter of wheat production. Her position is already assured. Her wonderful agricultural resources taken in connection with her international position, which was considered in our opening chapter, will give her a place of immense influence in the nation and in the world at large. As an indication of the way in which this fact impresses observing minds, we conclude this chapter with the following excerpt from a recent issue of the *Argonaut*, published in San Francisco, California:

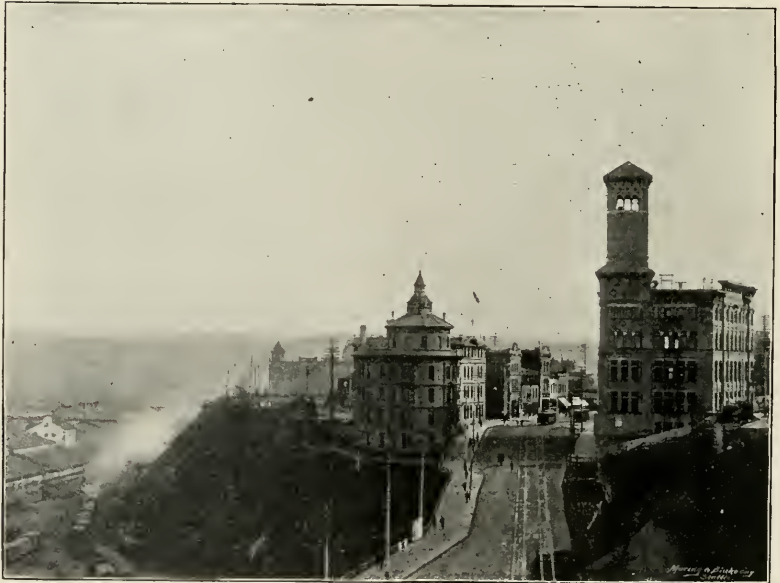
"That Puget Sound ports cut very largely into the Alaskan trade which the merchants of San Francisco expected to get in the days of the Klondike excitement is now familiar knowledge; but that the northern ports have overtaken and passed this city in the race for the Oriental trade is not so generally known. The Wall Street Journal has been compiling, from government reports, some figures on this subject, which makes rather startling reading.

"In the year 1900, San Francisco's exports to the Orient were valued at \$40,000,000, while those from the Puget Sound ports amounted to only \$10,000,000. The next year, this city's exports declined to \$35,000,000, while those of the northern cities increased to \$20,000,000. In 1902, San Francisco was passed, the northern cities having \$37,000,000 to this city's \$36,000,000. For this year San Francisco's exports are estimated at \$38,000,000, and those of the Puget Sound ports at \$50,000,000."

Having boundless agricultural resources and having captured the Oriental trade, there is no limit to the possible development of the state along agricultural lines.



SHIPS LOADING LUMBER
at a Puget Sound Mill.



THE "GATEWAY."
Tacoma.

THE SUGAR BEET.

Among the important agricultural industries of the state is the raising of sugar beets. Experiments made in other parts of the United States as well as Germany shows that the Washington beet is the richest in the world in sugar, due to the favorable conditions of climate and soil. The average of saccharine matter is 19 per cent and some fields have yielded 25 per cent or one-quarter sugar. Experiments in growing the sugar beet with thorough tests have been made in several portions of the state. Especially high values in sugar were obtained in Douglas, Spokane and other counties of Eastern Washington.

The effect of beet raising upon the soil is invariably good, as the process is equivalent to gardening and better than summer-fallow. It is stated that land which has been farmed consecutively will raise an enormous crop of beets, and alternating every few years the land will produce a rank growth of grain. The careful cultivation of the soil necessary for beets also frees it from weeds, which is an important item in itself.

There is only one beet sugar factory in the state, located at Waverly in Spokane county. It is in this vicinity that the industry of beet growing is in a flourishing condition. Farmers received about \$5.50 per ton for clean beets delivered at the factory. At this rate it is safe to say that beet culture will bring a return of from \$25 to \$35 per acre, although it is said that some have done much better than that. From a statement made by the president of the Washington State Sugar company, we gather that they will consume 30,000 tons of beets this year. The capacity of the factory is from four to five hundred tons of beets daily. The output this year will be in the neighborhood of 80,000 bags, or 8,000,000 pounds of refined sugar. The mill will be in operation from seventy-five to ninety days, and will employ from one hundred and twenty-five to one hundred and forty men during that time. To produce these

beets it requires during the planting, cultivating and harvest season approximately 350 men for a period of six months. The value of the output for this year, if the sugar was shipped in, would amount to \$400,000. It is expected that next year 10,000 acres of sugar beets will be cultivated around Waverly, which will necessitate the enlargement of the present factory to handle the product.

From reliable estimates furnished by the U. S. Bureau of Statistics we find that the people of the United States consume about 80 pounds of sugar per capita each year, hence the people of the State of Washington would consume something like 60,800,000 pounds of sugar, or about seven and one-half times the amount produced by the factory at Waverly. With the increasing population of our state there will always be an increasing demand, and in view of the possibilities of sugar beet production in the State of Washington efforts should be made to locate new factories here. The question of locations for additional factories has been canvassed in various portions of the state, and among the places which have been found suitable are North Yakima, and Prosser in Yakima county, and Waterville in Douglas county. We trust that these several factories may be built and that many thousands of acres of land may be planted to beets until the home demand at least is fully supplied. It is certainly not too much to expect that within a very few years this state will have a number of successful sugar factories in operation.

LIVE STOCK.

The live stock industry of Washington is progressing favorably, and while the range system of growing stock is rapidly disappearing other and better methods are coming into vogue. With the incoming of the homeseeker and the settlement of the public lands the once vast cattle ranges are becoming more and more curtailed and domestic methods of stock-raising are being adopted. It is only a few years since the greater portion of Eastern Washington was roamed over at will by herds of horses and cattle, but with the occupation and fencing of the lands as aforesaid for wheat raising and other agricultural pursuits the range days are passing and the sheep and cattle must find pasture in the mountains, and the more remote and rougher portions of the state. This is, however, not a disadvantage to the stock industry, although these conditions bring new problems to be solved. The solving of these new problems will mean the continued bestowal of more and better thought upon the matter of forage grasses and their production. The advantage gained will be that the stockmen of the state will not only maintain larger and better herds, but the farmers will be induced to engage to a greater extent than heretofore in that most profitable ally to agricultural pursuits, stock raising.

The State of Washington possesses the natural requisites of an ideal home for domestic livestock. Its extensive ranges on the mountain sides; its rich and fertile valleys, covered with dense and nutritious vegetation; its climate, tempered by the warm Japan current, combine to produce the necessary conditions for the best and fullest live stock growth and development.

It is a well known fact that the state does not as yet produce the stock necessary to supply local demands. That being the case and the state being in a geographical position to command markets in Alaska and the Orient as well as in the Eastern states, as shown elsewhere in this publication, it will be seen

that there is an unlimited opportunity for the extension of the business of raising live stock in this state.

All that portion of the state to the west of the Cascade mountains, when cleared, is capable of furnishing the richest pasturage in addition to producing oats and other forage products. Similar conditions exist in the irrigated and plateau regions in the eastern part of the state. Since the production of forage plants is becoming a matter of general interest beef cattle are being raised on a larger scale in the grain growing sections of the state. Wherever grain can be successfully grown and forage plants produced there will be found the conditions suitable for animals which subsist on them.

The healthfulness of the state is an advantage that should not be overlooked. The usual maladies which keep the eastern stockman in anxiety are not prevalent, and where they do occur are usually not virulent and can be easily controlled. Black leg in cattle, the terror of the southwest, is practically prevented by vaccination. Hog cholera and swine plague is always sporadic and occurs only after the importation of swine from the East. Diseases of sheep, particularly the stomach worm and other internal parasites, are as yet unknown. The equability as well as mildness of the climate of all parts of the state, except such as are mountainous, make it desirable for diversified stock growing. There are no sudden changes of temperature, and with reasonable care stock can be protected from the inclemency of the winter months. The feeding period for cattle and sheep is very short, and unless there is deep snow, which does not often happen, stock can thrive throughout the winter in the open fields. Insect pests give little trouble to stock. The cattle are not harassed by swarms of flies which make life a burden to them in more humid regions. The low temperature at night, which is a marked feature of the climate of most of the state, appears to be unfavorable to the propagation of these annoying pests. This single item is an advantage which cannot be over estimated. The Washington stockman does not need to make allowances for the terrors of "fly time."

HORSES.

In all the ages of the past and for all time to come the horse will be the most highly prized servant of man. The genius of



TROTting STALLION "ERECT. Sire "Director," Dam "Exehora."
Owned by Hon. A. T. Vandewater, Seattle, Wash.

man may continue to invent automobiles and every other kind of craft propelled by steam and electricity, but they will not supercede the Percheron at the plow, the Hackney at the carriage, nor the thoroughbreds racing to the delight of assembled multitudes. Man's inventions may to some extent supplement, but they can never supplant the horse nor detract from his acknowledged usefulness. For beauty, strength, intelligence and utility the horse will continue to be admired, and profit as well as pleasure will be found in his propagation, improvement and varied use.

The greater number of the horses heretofore produced in this state have been range bred and wear the marks of the branding-iron. This condition is rapidly changing, for with the extension of the farms and the enclosing of the public domain the domestic production of horses is greatly on the increase, and with the changing condition there is coming an improvement in the character of the animals bred. It is a fully demonstrated fact that the stockman with enclosed land and the farmers with their pastures can produce better horses than those heretofore bred on the ranges, and with the advent of settlers from the east, accustomed to the raising of blooded stock, the desire for improvement in this particular will bring results in a higher grade of horses of all kinds. The need for such an improvement is shown from the fact that there is a real scarcity of good horses. This department is not aware that any concerted effort has been made looking to the importation of fine stock, but a lively interest is being awakened and we believe in a short time a large number of high grade breeding animals will be brought to the state. An evidence of this awakening interest is to be found at the Van de Vanter stock farm in King county, where may be seen some valuable horses of high speed, among which is the Hambletonian trotting stallion Erect, a descendant of Messenger, hereinafter referred to. There is a particular need for the importation of draft and coach horses.

Among the better breeds of draft horses we might mention the Percherons, commonly known as French stock, which it is claimed are of Arabian descent. The Percheron horse stands among the first of draft breeds and his value has been thor-

oughly tested and demonstrated in the United States. Their color is usually gray.

The Clydesdale is another popular breed of draft horses. They are chiefly bays and browns in color.

For coach horses there is the Cleveland Bay, the Hackney and the French and German Coach, all of which are good general purpose breeds. There are comparatively few French and German Coaches in the United States, there being more of the Cleveland Bay and Hackneys bred in this country.

There are a variety of strains of trotting and pacing horses which are distinctively American. We believe the conditions are favorable for the breeding and training of fast stock in this state.

The chief families or breed of racing stock in this country are: Hambletonians, Mambrinos, Clays, Morgans, Bashaws and Pilots, all tracing their ancestry back to Messenger, the celebrated English trotting horse imported to New York in 1788. Persons interested and desiring to procure trotting stock will find descendents of any of these various strains to be of high standard.

There is an increasing demand for all kinds of horses in the state for the cultivation and harvesting of crops in the agricultural section, the hauling of lumber products on the sound and cartage and draying of all kinds in the cities. There is a demand for pack animals, and in this regard the mule is indispensable. They are used for transporting materials and supplies to the mines and in military service. Suitable animals for the cavalry and other branches of the military service are always in demand by the United States and other governments.

CATTLE.

Perhaps the most important branch of our livestock industry is cattle raising. This is particularly true for two reasons: First, the adaptability of the soil, climate and conditions in Western Washington and the river valleys of Eastern Washington to dairying, and second, the unfailing demand for dairy products and the notable lack of an adequate beef supply. The stock heretofore raised has been of rather inferior quality, being raised chiefly on the range and having had to shift for themselves at all times of the year for sustenance, but as before

stated the ranges of the state are being turned into farms, and with this condition there is coming an awakening of the farmers of the state to the value of pure bred cattle. While the numbers of high grade cattle bred in the state are not yet large, it is encouraging to note that there are quite a number of breeders of fine cattle located in different parts of the state. A list of such breeders will be given elsewhere in this report.

Beef Cattle.

The Hereford is considered one of the best breeds of beef cattle. They are a large stock and can usually be distinguished by their markings. They are uniformly red with white face, throat, chest, belly and legs, and having a white stripe extending along the top of the neck and shoulders. They are full chested, well rounded, straight backed, broad and massive in appearance. Some of the advantages claimed for them are: uniformity of appearance, prolific breeding and early maturing; it being claimed that no other breeds can be made ready for market at so little expense and so young as the Herefords.

There are the various breeds of hornless cattle, possessing varied merits, the most of which are good beef stock. There are four principal breeds, to-wit: Polled Angus, Galloways, Red Polled and Polled Durhams. Much has been said in favor of the Red Polled cattle as a general or dual purpose stock. They are said to possess good and long yielding milking qualities; they are large, mature early and are good feeders.

Judged by the standard of value the Shorthorn is without a rival, and throughout the whole country Shorthorns were never more popular than they are to-day. From figures given in various herd books in the United States and Canada we glean the following:

Of Shorthorns there are $3\frac{1}{2}$ to every 1 of Herefords.

Of Shorthorns there are 12 to every 1 of Angus.

Of Shorthorns there are 25 to every 1 of Galloways.

Such a showing is conclusive evidence of the favor in which this class of cattle is held by the public. The Shorthorns are of three colors, *i. e.*, red, white and roan, each of which colors have their advocates. In the language of an eminent authority "The Shorthorn is distinctively and emphatically a dual purpose breed." The bull calves, being large, can be turned into

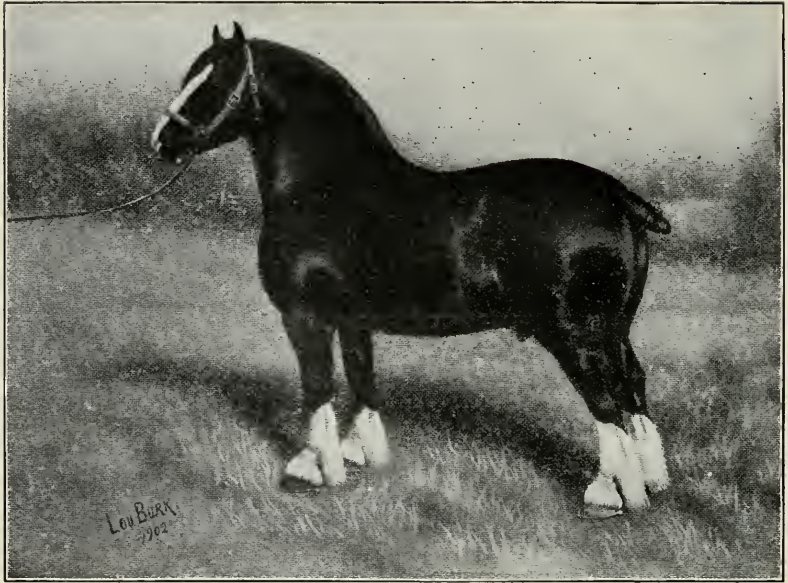
the finest of market steers, and the heifers can develop market value for the dairy. For the purpose of building up common or native stock of medium size a cross with a pure bred Shorthorn bull will bring the best results.

Dairy Cattle.

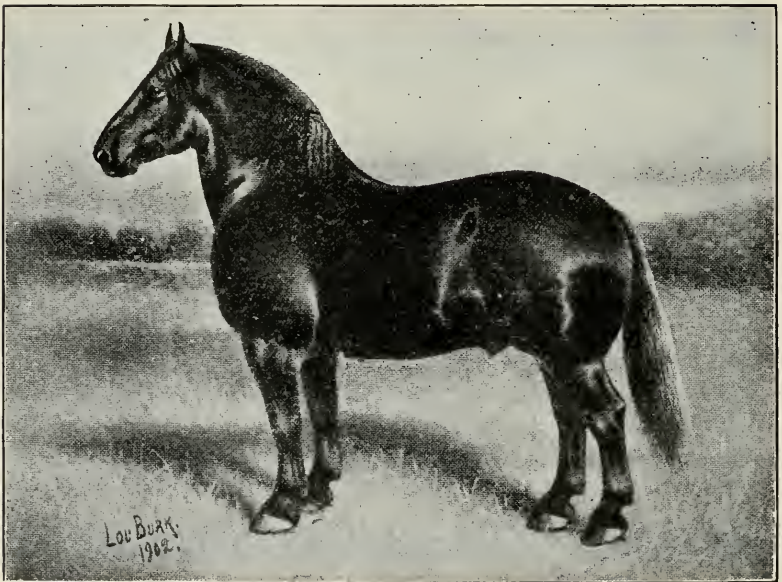
While it is true that the Shorthorn cattle make the best of meat stock it is also true that the breed has produced cows of splendid milk capacity. The breeders of large cattle will no doubt continue to devote more attention to feeding and flesh qualities, but it is certainly of advantage to the people of Washington, where dairying is of such importance, to pay more attention to milk producers. At the World's Columbian Exposition Shorthorns won more prizes than all the other breeds combined and in the dairy tests the amount of milk produced by the champion Shorthorn cow in 90 days was 3,679.8 pounds. That produced by the best Jersey cow in 90 days was 3,634 pounds. By the champion Guernsey cow in the same time was 3,548.8 pounds. The average farmer raising cattle in connection with other diversified interests does not only secure milk, cream and butter for home consumption, but the cows which provide these necessities produce also with each season a calf, which if of the large breeds can be profitably raised, for the steers will have the size that will bring a good price as yearlings, two-year-olds or for feeding purposes, and the heifers can be retained in the breeding herd. It is our object to interest, as far as possible, the citizens of this state and to present to them the necessity of combining beef and milk producers in their herds.

As dairy stock the Jerseys and Guernseys are well known, and it is not necessary for us to enter upon a discussion of their merits, but it will be of interest to note the record of thirteen Jersey cows, given by A. M. Stevens, of Ellensburg. For the year ending August 31, 1903, they produced 84,172 pounds of milk, 5,690.5 pounds of butter, which sold for \$1,358.61, or an average of \$104.50 per cow. Crossing Jersey cows with Shorthorn bulls has been tried and with good results in some portions of the country.

Holsteins are also bred to some extent in this state, and while they have their defects it is claimed for them that they



“PRINCE WILLIAM, JR., No. 870. Sire Cidrie No. 929.
Clydesdale Stallion, winner of first prize at International Horse Show, 1901,
and Oregon State Fair, 1903.



PERCHERON STALLION COLT “SCOTT,” No. 26318.
Archie R. Galbraith, Owner, Spokane, Wash.

are heavy milkers in point of quantity, yet as to quality, both as to milk and meat stock they are not considered the equals of other breeds.

As the production of meat, butter and cheese in this state is far below the demand and the ruling prices for these products are high, there is a splendid opportunity for any person desiring to engage in the business of raising stock for beef or dairying. There are many openings in different portions of the state, and it would be well for intending settlers to consider this matter, as it certainly is a most promising and profitable occupation.

SHEEP.

The sheep industry in this state has been confined chiefly to the ranges, and the fact that fortunes have been made by men who stuck to their flocks through diverse as well as prosperous times testifies to the stock value of this animal. The same causes that operated to reduce the horse and cattle ranges have likewise diminished the available sheep ranges, and the restrictions put upon the use of the U. S. Forest Reserves have contributed to the sheepman's difficulty in finding adequate pasture for his flocks. Hence it is only a matter of time when the large flocks must give way and in their places will be found smaller flocks in enclosed pastures throughout every part of the state. There is no reason to doubt that in the future more sheep will be fed grain and fattened for the market, since there is always a good demand for mutton, and Washington mutton is the best in the world. The breeds of sheep will doubtless change and those adapted to mutton will be more and more produced. We are enabled to state on the authority of figures prepared by the United States Department of Agriculture and published in the July "Crop Reporter," that Washington produces more wool to the sheep than any other state in the Union. The average weight of our fleeces is 8.6 pounds, or $2\frac{1}{2}$ pounds heavier than the average production for the entire country. The heavy weight wool production indicates favorable conditions existing in our state as to climate, range and feed, and our sheepmen should carefully guard these conditions and see that the ranges are not depleted or over grazed, and that nothing should be done to permanently destroy their natural advantages. The rolling lands of the entire state are admirably adapted to sheep

raising, and as the area devoted to tame grasses is increased there seems to be no reason why the number of sheep should not be largely increased.

ANGORA GOATS.

In the timbered areas of the state and throughout the mountain region where the clearing of land is a problem with the settler, there is great promise in the breeding of Angora goats. The Angora is a native of Asia, and is valuable for his wool, which is mohair, a substance exceedingly bright, soft, strong, elastic, warm and durable. It is said that the flesh of the young Angoras can not be distinguished from lamb. The principal thing that the Angora does is to eat, and by choice he prefers leaves, bark, brush and most any other substance without value, but such articles as grass, hay, grain, roots, etc., he eats as a matter of necessity. He is a good feeder and needs plenty of salt. He is a scavenger only in the sense of being fond of many plants which are noxious to other animals. The Angora's hide is stronger than sheep skin, and the hide with the mohair on makes good mats, rugs, lap robes, etc. This goat requires very little care, but should have a shed as a shelter from the wet and cold. By eating buds off of shrubs, and sprouts from weeds the Angora helps to clear land and prepare it for the planting of grass seed. High places which are rough and dry suit these goats best for places of rest and sleep. With all of these things taken into consideration these goats are destined to take a prominent place among the domestic animals to be raised in this state.

HOGS.

The notion existing in the minds of many people that the hog can not be profitably produced except in the corn growing sections of our country has been completely exploded. We will admit, of course, that the greatest amount of pork products in the country are raised in the corn belt, but we are just as sure of the fact that hogs can be raised and fattened, and as fine a quality of pork produced in this state as elsewhere, and with profit to the producer. It has been demonstrated that hogs may be fattened upon wheat, and the wheat thus fed yields returns to the grower equivalent to one dollar per bushel. Since this is the case there is no reason why the people of this state

should not produce all of the pork products consumed here, as well as competing for the export trade to Alaska and other Pacific Coast points. Those of our farmers who are combining the stock raising industry, including the raising and fattening of hogs, with their other agricultural pursuits are becoming the most prosperous. There is a great inducement to raise hogs for the purpose of consuming the waste products of our orchards and gardens, thus turning what would otherwise be a matter of loss to an item of clear gain.

No great attention has been paid to the breeds of hogs in the state, but some of the well known breeds raised are: The Poland China, which is the most popular and out numbers any other breed in the United States. The Berkshire is another favorite breed as is also the Chester White. For all-round purposes and for being best adapted to this state the Poland China takes the lead.

POULTRY.

Under this head we propose to treat the subject of fowls with respect to their use, and to properly classify them we will divide them into three classes, viz.: layers, table fowls and general-purpose fowls.

LAYERS.—Layers consist chiefly of two races, viz.: The Mediterranean and Hamburg strains. Of the first, the well known varieties are the Leghorns, the Spanish, the Minorcas and Andalusian. In the Hamburg class there are several varieties. Of these classes of fowls are to be found the most prolific layers; of the two races, the Mediterranean lays much the larger egg.

TABLE FOWLS.—The best table fowls consist of three races: The Dorkings, Oriental Games and French fowls. The several varieties of Dorkings are of good size and have an abundance of flesh. The several varieties of Oriental Games possess very plump and meaty bodies, the Indian Games, particularly, having a wonderful development of breast meat. The French fowls consist of the Houdans and other varieties and are not extensively bred in the United States.

THE GENERAL-PURPOSE FOWLS.—This class consists mostly of American and Asiatic fowls. The American class consists of Plymouth Rocks, Wyandottes, Javas and Dominiques. They are above medium in size and are excellent general-purpose

fowls, being fairly good layers and hardy. The Asiatic consists of Brahmas, Cochins and Langshans, and are characterized by great size, having feathered shanks and being particularly well adapted for dry and cold climates.

The ordinary farmer in the selection of his poultry should consider the breeds best adapted for all purposes and should consider the climatic conditions. As in Eastern Washington, the Brahmas, Cochins and larger breeds will do well, while in Western Washington the Leghorns, Minorcas and Plymouth Rocks would prove more profitable. There is money in the poultry business when eggs always bring 20 cents per dozen and upwards, and dressed poultry is worth from 15 to 20 cents per pound, as is the case in this state.

BEE CULTURE.

Bee culture is becoming an important industry in the state and is a profitable adjunct to general farming. We may say that this is particularly true in Western Washington, where white clover grows luxuriantly and in the irrigated sections of Eastern Washington, where the bees flourish on the blossoms of the alfalfa, as well as on the blossoms of the fruit trees. It is said that the bee is a great benefactor to an orchard in pollenizing the blossoms.

The industry in this state has been to a great extent neglected in the past, but the profits derived therefrom and the little effort necessary to secure results, is bringing the industry into greater prominence.

There was produced in the State of Washington last year something over 500,000 pounds of honey, and in the neighborhood of 10,000 pounds of beeswax. The market value of this product amounted to upwards of \$65,000. It is estimated that a healthy hive of bees will produce sixty pounds of marketable honey each season. There is always a good demand and the wholesale prices run from 8 to 15 cents per pound.

Bee culture is destined to take a prominent place in the farming communities of the state. It requires but little capital and the bee-keeper needs but a small tract of land. The business can be confined to the small fruit growing and other kindred industries, in which the principal requirement is attention to the details of the work.



THOROUGHbred JERSEY COWS. Phot. by A. M. Stevens
Owned by A. M. Stevens, Elletsburg, Wash.

DAIRYING IN WASHINGTON.

In our treatment of this subject in a former publication we stated that the industry is confined more or less to the northern part of the United States, and to the southern provinces of Canada. That is true on account of the temperate climate and for the reason that the milk can be preserved and handled to better advantage in those regions than in a warm climate. To the north of the above mentioned bounds the question of forage and the care of stock becomes a serious question. The State of Washington is peculiarly favored by nature for the development of the dairying industry. The climatic conditions here, most important of which is the short mild winter, the splendid pastures with their abundance of nutritious grasses, the yield of hay and other stock food, together with the finest kind of water, particularly in the western part of this state, make it an ideal country for the dairy business. The irrigated sections of Eastern Washington, if there is any difference, excel in advantages the favored western section. With the marked progress in the introduction of forage grasses that the past few years have witnessed it will not be long until dairying is extended to every part of the state. As an assurance that the business will continue to grow and become more and more prosperous it is only necessary to refer to our unflinching markets, and the unlimited demand that exists for dairy products. The creameries of the state only supply about thirty per cent of the dairy products used in the local trade of the state, while if we had the product we might supply the mining regions of the north, the islands of the Pacific, the Orient and the inland regions of Idaho, Montana and British Columbia.

In those portions of the state where the dairy industry is most highly developed the farmers are most prosperous and contented. It is also true that in these communities the people meet their expenses more readily, paying cash instead of run-

ning bills from one year to another. There can be no question that there is money to be made in the creamery business and in supplying milk to creameries when the farmer has the right kind of cows and gives them proper food and care. This office has the personal statement of a farmer, who has been selling milk to one of the creameries of the state, and for the first six months of this year he received from the product of his thirty cows monthly payments averaging from \$275, the lowest payment, to \$341, which was the highest amount received. In other words he received an average of \$10.25 per month for each cow for six months.

Dairying is certainly one of the most important branches of agriculture. This is true for several reasons. In the first place, dairying enriches the soil, while the growth of cereals impoverishes it. Then again it furnishes each farmer with employment for each member of his family. During the summer months their time is devoted to the growing and caring for the feed to be consumed by the cows during the winter months. In the winter they have the stabling, feeding and care of the stock. Then again in the dairy business there is never a failure of crop. The agriculturist may have a bad crop year and no surplus earnings, but the dairy farmer has a regular monthly income with no failures. He also has the advantage, if careful in the selection of his stock, of having a very considerable income from the vealing of calves, or a still better income if he has plenty of range and can raise beef steers for the market from year to year.

To those interested in dairying in our state we might offer a few suggestions that will no doubt be of benefit if acted upon. The first requisite, of course, in any business is care and attention to details. The man who is engaged in the dairy business must to a certain extent be a specialist and study the manufacture of butter and cheese in all its phases and in every operation, from the testing of the milk to the putting up of packages of butter. A man can not afford to guess at the quality of his milk. The markets demand a product of high quality, and to produce such there is no room for guess work of any kind. Everything must be done accurately and systematically. In the matter of keeping his cows he must see that they are properly housed, that the stables are kept clean, and provision must

be made for a variety of feed during the winter season. The dairyman should also have a definite time for breeding his cows, and should ever have in mind the improvement of his herd by the frequent infusion of new blood. He should be careful at all times to see that his cows have plenty of good, fresh water, and that they are not compelled to drink from sloughs or stagnant pools. He should remember that the care of each individual cow is a matter of great importance, and that it is no benefit to a cow to fan her with the milk stool or nudge her with a No. 10 boot. Kind and careful treatment all the time pays best. The cows should have all the comfort possible, including a good bed and a comfortable stable. They should have as much liberty as is consistent with security, cleanliness and convenience. The stable should be well ventilated. The cows should be milked and fed regularly, always bearing in mind that a well balanced ration is necessary. The farmer who follows these directions will be reasonably sure of meeting success in the business.

From the report of the State Dairy Commissioner we glean the following figures: The increase in the production of butter for the year 1900 to 1901 was 1,150,141 pounds, and the increase in the production of cheese for the same period was 87,860 pounds. The increase for the year 1901 to 1902 was 996,432 pounds of butter and 22,802 pounds of cheese, thus showing an increase for the two years of 2,146,573 pounds of butter and 112,662 pounds of cheese. This would indicate that the dairy business of the state is in a healthy condition and rapidly increasing, yet notwithstanding this increase the local consumption amounts to more than double the production.

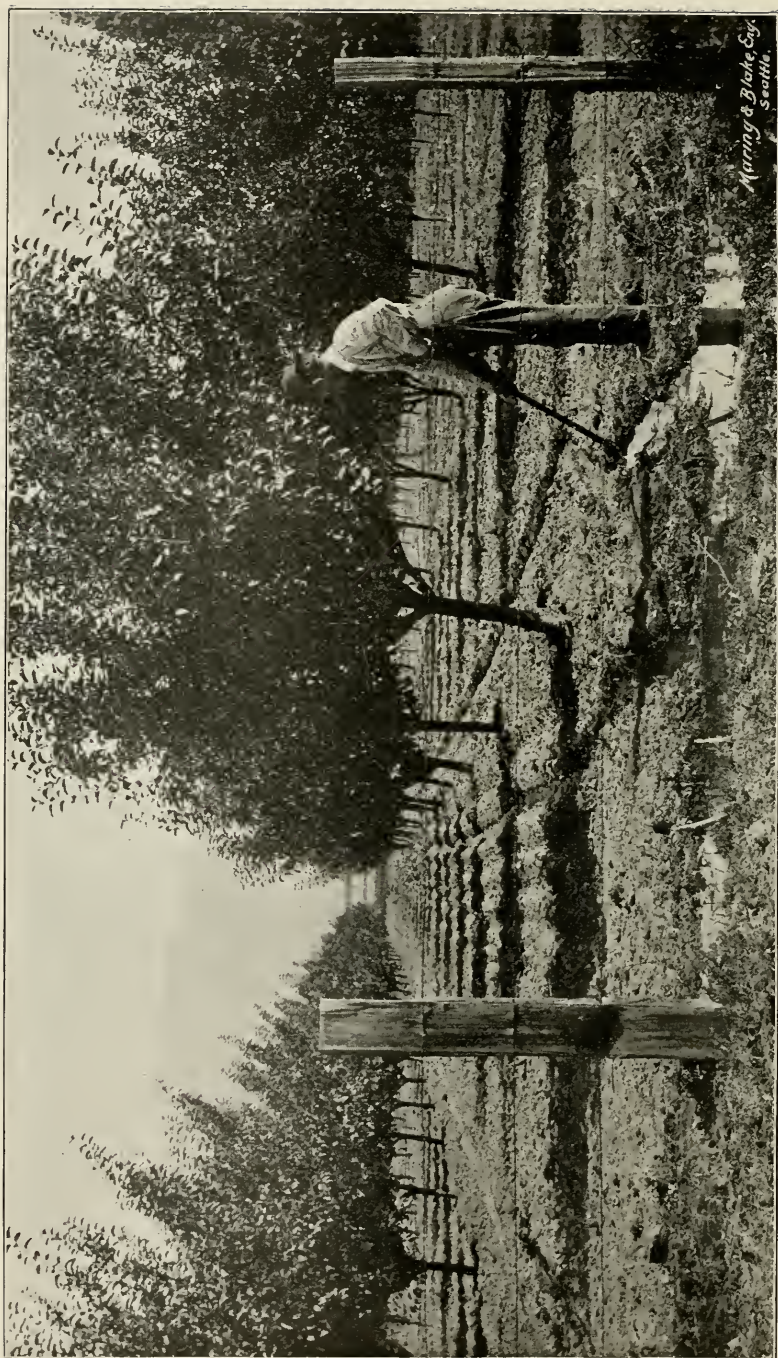
Tables showing the location of creameries and the production of dairy products by counties will be found under head of Miscellaneous Statistics.

HORTICULTURE.

Horticulture may be called the sweetheart, the bride, the summer dream, the poem of agriculture. The asperities, the commonplaces, the prosaic details of corn and wheat, and hogs and harrows, become all tinged with the moonbeams of sentiment, when Vertumnus and Pomona and Flora and the circling Horæ join hands around cold and hard old Saturn and hide his heavy gloom with their mellow and jocund grace. All the cloying and mellifluous words known to the language come at our call when we enter the gardens and the orchards.

There is not the need of a lengthy discussion on horticulture in this state, for the reason that our chapters on irrigation and agriculture develop many of its essential facts. Success in horticulture depends on climate, soil, intelligent industry and markets.

We have already seen that Washington has a remarkable range of climate, from the nearly sub-tropic of the Columbia and Snake river bottoms, to the severely cold of the high plateaus near the mountains. Its rainfall varies from the six inches around Kennewick to the hundred and thirty inches of cloudy Neah Bay. With such variations of climate are equally striking variations of soil. There is the gravel land of the Spokane prairie and the prairies of Pierce and Thurston counties south of Puget Sound. There is the sandy loam and "shot-clay" land of the sound shores and islands; there is the "beaver-dam" of the marshes and the deep alluvium of the river valleys in all parts of Western Washington; there is the granite sand and loam of Chelan, Okanogan, Ferry and Stevens; the basaltic sand and volcanic dust of the Wenatchee, lower Yakima and Columbia; the deep, heavy loam of the plateaus of the eastern part of the state, and finally there is the heavy clay in portions of the foothill belt of Eastern Washington, the timbered regions of the southwest along the coast and the lower Columbia. With



*Marring & Blake, Exg.
Seattle.*

A FIVE YEAR OLD APPLE ORCHARD.

such variety of soil we may expect to find variety of production of fruits and vegetables. One peculiar fact in respect to fruit culture is worth noting here, and that is, that generally speaking, fruit trees prefer an undulating surface.

In selecting a site for an orchard a wet soil should be avoided. Soils with natural drainage are particularly desirable, because, being warm, they give up their fertility easily and allow early cultivation. The sandy loam valleys are best suited for the raspberry and the blackberry.

It will be impossible in the narrow limits of this chapter to give even a small part of the interesting details in regard to the localities, the sort of fruit produced, the methods of culture and the markets. But we shall endeavor to present such a picture as may convey an accurate general impression to such readers as may be especially interested in this branch of the state's industries. We shall find it most conducive to clearness to describe separately the localities of the state which have already become famous for their orchards and gardens; but we shall not forget to note those which have the natural conditions for fruit culture, but which have not yet been developed.

WESTERN WASHINGTON.

On the west side of the mountains three localities have become famous for their production of fruit and vegetables. These are the island country, consisting of Island and San Juan counties, the valleys of the White river and the Puyallup river and King and Pierce counties, and the parts of Clarke county bordering on the Columbia river. According to Professor Fulmer, of the State Agricultural College, the soils of Western Washington are unusually high in phosphoric acid and nitrogen, but have a lower average of potash and lime than the soils of Eastern Washington. It is of great importance therefore to Western Washington that such great deposits of lime, easily accessible, are to be found here.

The Island Section.

This section has an important advantage for fruit culture. There is less rainfall and more sunshine here than in any other portion of Western Washington. Owing to the configuration of coast and mountains, the rainfall on these islands is only

about twenty-five inches a year, about half that at Seattle and Tacoma. Being surrounded by water the temperature is remarkably uniform, day and night, summer and winter being more nearly the same than in any other part of the state. Sometimes an entire year passes without frost. Roses bloom outdoors perennially. On these islands there are many rich little valleys, while the higher land is also available for fruit culture.

Certain kinds of fruit reach the height of perfection in this section. Cherries, strawberries, blackberries, raspberries, plums, pears and apples are of a size and quality hard to match anywhere. Fruits and vegetables of all sorts reach market earlier from this region than from anywhere else in Western Washington.

Land adapted to horticulture can be obtained at moderate cost in either Island or San Juan counties. Land already cleared and set out to trees is held at good figures, from \$100 to \$300 an acre, according to locality. But the productiveness of the soil justifies the price. These islands have the further advantage of a ready market for their products, being within easy striking distance of Seattle, Tacoma, Everett and Whatcom, and through them the markets of the world.

The Puyallup and White River Valleys.

The region of greatest productiveness, because of its having reached the highest state of cultivation in the horticultural industry of Western Washington, is that of the White river and Puyallup valleys, between Seattle and Tacoma. Almost every advantage of location, soil and climate that can be considered belongs to these fruitful valleys.

Their value for hay and hops has already been considered. In the lines of fruits and vegetables they are devoted especially to the production of apples, pears, plums, cherries and berries of all sorts, while the gardens produce immense quantities of potatoes, onions, cabbages, beans, cauliflower, peas and other "truck."

As samples of the conditions prevailing in these valleys, we will more especially describe the berry patches in the vicinity of Sumner and Puyallup. It may be said that this industry has

been greatly advanced by the Puyallup Fruit Growers' Association, one of the best examples in our state of what can be done by intelligent co-operation. The association has been in existence only about six years. Immediately before that the annual crop of berries was only about 300 crates, and the average price received by the growers was 80 cents a crate. Last year the sales reached 20,000 crates, at an average price of \$1.50 per crate. It is expected that the present year, 1903, will see a yield of 50,000 crates of berries, and, judging by the number of new orchards to come into bearing, the association estimates that next year it will sell 100,000 crates.

Only a small amount of land is needed to yield large returns in berries. The kinds produced are more especially the different varieties of raspberries, blackberries, dewberries and Logan berries. The Logan berry is a cross between the raspberry and the dewberry. It grows larger than either, is very prolific, of delicious flavor, though rather tart and thus especially adapted to preserves and use in pies and puddings. To illustrate the results obtained in the berry industry, we may name a place of three acres owned by Mr. O. B. Odell near Puyallup. From an acre of raspberries he derives an income of \$500. Mr. C. C. Williams has two and one-half acres of raspberries on which forty pickers are sometimes employed, and from which a thousand crates have been gathered this year. Mr. Rowley makes a good living on his tiny farm of an acre and a half.

The berry business of Puyallup has now reached such proportions as to make it necessary to adopt a systematized schedule of shipping. As high as 1,300 crates have been shipped in a single day. The shipment of 6 A. M. goes to Seattle, that of 8 A. M. to Montana, that of 11:45 to Everett, Whatcom and other northern points, while two afternoon shipments are made, one to Idaho and Montana points on the Northern Pacific Railroad, and one in refrigerator cars, which goes to the Minnesota cities and Winnepeg. Large amounts also are sent to Gray's Harbor, besides supplying the local demand at Tacoma.

As may be readily inferred, an acre of land which can produce 400 crates of berries worth \$1.50 per crate, necessarily brings a high price in the real estate market. Such tracts as those owned by Mr. Williams and Mr. Rowley could hardly be

purchased at all. Unimproved land adapted to berry culture, and in the near vicinity of Sumner or Puyallup, is worth from \$100 to \$250 an acre.

The White river valley has the same conditions and capacities, and essentially the same kinds of products as the Puyallup.

The production of strawberries and other small fruits is assuming large proportions around the shores of Lake Washington, and particularly in and about Maidenbauer bay.

The Columbia River Section.

Passing over from the sound valleys let us look for a moment at Clarke county in the southern part of the state. In the vicinity of the historic old town of Vancouver and along the banks of the Columbia river for a distance of fifteen or eighteen miles, we find the best prune orchards of the state. There is here a heavy soil, an abundant rainfall, and apparently the peculiar combination of conditions needful to produce the best results for this especial kind of fruit.

There is considerable land in Clarke county well adapted to prune culture, which can be had at moderate prices. The shipment of prunes from this section amounts annually to about 100 car loads.

In completing our survey of the horticulture in Western Washington we may say that practically all the valleys of that region have the same capacity as those which have been thus far especially developed. Apples, pears, plums, and cherries are also produced in large amounts and of superior quality throughout all the older settled portions of Western Washington. Nor are the valleys alone available for fruit culture, the uplands being particularly adapted to the culture of fruit trees of all kinds. In fact there are already many fine gardens and orchards on the Snohomish, Stillaguamish, Skagit, Nooksack, and Cowlitz rivers. To the homeseeker at moderate means these regions furnish a better opportunity than do the more developed valleys of the White and Puyallup rivers, for the reason that prices of land are lower.

EASTERN WASHINGTON DIVISION.

We shall find in the section east of the mountains a greater diversity and greater distribution of horticultural products, re-

sulting from the difference in soil and climate and the greater available area.

Central Washington Section.

In Central Washington we find five special centers of horticultural industry. They may be named in order of amount of output as follows: 1. The Yakima valley and lateral branches from Wenas to Kennewick. 2. The Wenatchee valley in Chelan county. 3. The portions of Klickitat county bordering the Columbia river. 4. Lake Chelan. 5. The Kittitas valley. It should be added that though the Kittitas valley is least in output of fruit, it surpasses some of the others in amount of vegetables.

1. The Yakima Valley.

The Yakima valley far exceeds any of the others, in fact all combined, in acreage and in amount and value of products. Cultivation there is almost entirely by means of irrigation. According to the U. S. Census of 1900, there were under irrigation in 1899 in Yakima, exclusive of the Indian reservation, 93,775 acres, of which considerably over half was in hay. As seen in our chapter on irrigation, that amount has been greatly increased since 1899. Out of the output of irrigated vegetables in the state to the value of \$427,385 in 1899. The value of that produced in Yakima county was \$126,147; and of irrigated fruits to the entire value of \$414,717, Yakima produced \$149,022. It must of course be remembered that the bulk of horticultural products in the counties further east is raised without irrigation. The most highly developed fruit regions of Yakima are the artesian belt of Moxee, Parker Bottom, the Zillah, and Sunnyside. The profits of fruit-raising in this region are so well set forth by direct testimony that we incorporate portions of two letters from well-known residents, addressed to the Washington Irrigation Company:

“ZILLAH, WASH., December 25, 1901.

“WASHINGTON IRRIGATION CO.,

“Zillah, Wash.

“GENTLEMEN:—In 1894, after an examination upon the ground, I purchased 30 acres of raw land about three miles from Zillah, paying for the same at the rate of \$70.00 per acre. I set out an orchard, principally of winter apples, together with ten acres of Italian prunes. I soon learned how to handle the land and water.

"A portion of my apple orchard came into bearing at the age of three years from the time of planting, and from two and one-fourth acres I obtained 300 boxes of marketable apples; at the age of four years from the same acreage, 800 boxes; at the age of five years, 1,300 boxes; and this year my apple trees were seven years of age, and from two and one-half acres of Ben Davis trees I gathered 2,500 boxes of choice apples, receiving an average of \$1.00 per box for same. This is the first year my trees have been in full bearing. From 45 summer apple trees of the same age, I sold 430 boxes of apples at 75 cents per box; and from ten acres of seven-year-old Italian prune trees, I secure a yield of 10,000 crates, for which I receive 45 cents per crate. f. o. b. cars.

"My hops averaged this year about 1,700 pounds to the acre, but with better care and cultivation I expect to increase this yield up to 2,000 pounds per acre another year.

"I have always found a good market for all my produce, never having had any trouble to sell. The demand always exceeds the supply, and the buyer seeks the farmer. We ship our products east and west.

"Yours truly,

"R. D. HEROD."

The second letter is from the same district and reads as follows:

"ZILLAH, WASH., February 7th, 1902.

"WASHINGTON IRRIGATION COMPANY,

"Zillah, Wash.

"GENTLEMEN:—Ten years ago last August I bought 80 acres of land under the Sunnyside canal. I paid \$25,00 per acre for the land with the water right. My purpose was to go into the fruit growing business. Accordingly I set out 1,200 peach trees in the spring of 1892. I put my sons on the land and furnished the capital to start a small nursery. We raised our own trees, except the peach trees mentioned above. I have now 3,000 apple trees, some pears, cherries, plums, prunes and apricots, in all about 5,000 trees. I would not take \$200.00 an acre for the land now, for the amount, \$16,000.00, at ten per cent would not pay as much as the farm.

"Some years are more profitable than others, but the average is high. The past year was one of the most favorable in the history of the valley. If I knew I could have such a year once in five years, and make only expenses the other four years, I should consider the fruit business a profitable one; but I know from experience that I can do far better than that.

"My peach crop was light the past season, but the apple crop heavy. I keep an accurate account of all receipts for fruit sold, and find that I received in cash, so far this year, \$5,070.73. I have two cars of apples sent out and not yet reported on, that will bring at least \$1,000; then I have about 7,000 boxes of apples on hand that will bring me about

\$8,000.00 The total receipts will be about \$14,000.00. All expenses can be paid with \$4,000, leaving me net \$10,000. My fruit ranch is not for sale at any price.

Yours respectfully,
"F. WALDEN."

Yakima county has now taken the first place in the state in amount of horticultural products shipped, having passed Walla Walla and Whitman counties during the year 1902. The number of carloads of fruit marketed in 1902 was approximately 1,200. Vegetables also are produced in immense quantities. Large tracts of land on the Indian reservation are rented for this purpose and devoted to potatoes, onions, tomatoes, melons, turnips, etc. A rough estimate of the amount of vegetables produced in Yakima county in 1902 would be about 2,000 carloads. This goes to all parts of the Pacific Northwest, especially Alaska. All the ordinary fruits of temperate climates grow in the Yakima valley, while in the lower parts, as around Kiona and Kennewick, the finest of delicate peaches, apricots and nectarines yield profusely. Sweet potatoes and peanuts are beginning to be raised to a considerable extent in those districts.

2. The Wenatchee Valley.

In the Wenatchee we find a district comparatively small in size, and yet of such beauty and productiveness that it might be called the Washington "Vale of Cashmere."

The Wenatchee river rises in a lake of the same name in the heart of stupendous mountains snow-capped the year round. It descends in a streak of foam into a narrow canon, whence it issues clear and sparkling upon a smiling valley, thirty miles long and from one to five miles wide. The soil, air, water and an indefinable something—call it the genii of the place, which imparts the last touches of perfection—seem to have marked the Wenatchee for the natural home of fruits and vegetables. If one region more than another can be called the "jewel," that title must probably be accorded to Wenatchee. A great variety of fruits are produced here. Being at a low level with almost constant sunshine, and almost entire freedom from frosts, the peach, apricot and nectarine are specialties. Tomatoes, water-melons, canteloupes, egg-plants, strawberries, grapes and early apples are also produced abundantly.

Though the Wenatchee does not at all approach the Yakima in aggregate production, yet in proportion to area it surpasses its big sister. Through the courtesy of the assessor of Chelan county we are able to state that during the year 1902 there were shipped from Wenatchee 267,773 boxes of fruit and vegetables, weighing about 7,500,000 pounds. Since January 1 of the present year there have been shipped 23,970 boxes of winter apples of last year's crop, the price of which varied from 90 cents to \$2.50 per box. About 25 per cent should be added to the above amount for home consumption. We should thus have a total of horticultural products from the country immediately contiguous to Wenatchee of approximately 10,000,000 pounds, or 5,000 tons, or about 350 carloads. When we consider the comparatively small area of this region and its population of only about 2,500, with the further fact that in addition to the fruit great quantities of hay are produced, we can form some conception of the great productiveness of the Wenatchee valley. We have space only to mention one instance of a horticulturist living near Mission in this valley, who has made the statement that from three acres of tomatoes he was, last year, netted the sum of \$1,100 over and above all expenditures. This means that on each acre of the land the cultivator realized a profit of \$366.66 for a single year.

3. The Columbia River.

Southern Klickitat county has a number of very productive fruit belts, the oldest and best developed being the White Salmon valley. The conditions here are also at their best. Owing to their proximity to the great snow peaks, Adams and Hood and the Cascade range, there is a much larger rainfall here than in the regions last described. Most of the section has natural forests, which must be removed to fit the land for cultivation. White Salmon is opposite Hood river on the Oregon side, and the two localities have established a wide reputation for their strawberries. The Hood river berry was developed here and is known everywhere as the best shipping berry in existence. The output of the White Salmon valley can not be so accurately stated, as it is transported both by rail and boat, and less regularly than in some of the other districts, but probably it might



SPITZENBERG APPLES GROWN IN WASHINGTON.

*Manning & Blodgett
Seattle.*

be safely estimated at about one hundred carloads of fruit and vegetables annually.

The Columbus district of Klickitat county has some of the oldest and finest peach orchards in the state. This is east of White Salmon and water is required by reason of the scanty rainfall.

Blalock island is on the Washington side of the Columbia and embraces about 4,000 acres of land which it is the intention of its owner to devote entirely to fruit raising. A pumping station raises water from the river for irrigation, and the entire island is rapidly being transformed into a scene of verdure. By reason of the location this island is the next thing to tropical, peach and apricot trees blossoming in February, and strawberries being ripe in April. Tomatoes and green corn are ready for use by the 1st of July. For peaches, nectarines, grapes, berries, tomatoes, melons, sweet potatoes and peanuts, Blalock island will without question, become one of the most notable sections of the state.

4. Lake Chelan.

The Lake Chelan district has the same characteristics as the Wenatchee valley, except that the orchards are younger and smaller and there is less land available for cultivation.

The lake with its shores and adjoining canons, constitutes a scenic attraction of such superlative magnificence that any other considerations are lost sight of, yet it is destined to be a close second to Wenatchee in quality and quantity of especially choice and delicate fruits.

5. The Kittitas Valley.

The Kittitas valley is rather cold for the tender varieties of fruit, but apples and pears of the finest flavor are produced there in large quantities. The great amount and unsurpassed quality of the vegetables, however, are the distinguishing features of the Kittitas. Potatoes of a very superior quality are here produced in large quantities. By reason of being nearer to tide-water than any other part of the Inland Empire, this section is especially favored in market.

EASTERN SECTION.

Crossing the Columbia river we find it less easy to localize horticulture than in either western or central parts of the state. Yet we may distinguish three more or less distinctly differentiated districts.

1. Snake River District.

The Snake river bottoms or "bars," as they are often called, constitute a strip one hundred and fifty miles long in six different counties, viz: Whitman, Franklin, Asotin, Garfield, Columbia and Walla Walla.

The Snake river orchards are unique. Here is a ribbon of rich sandy alluvium at the bottom of a rocky canon from 500 to 2,000 feet deep. For centuries the rich dust has been dropping from those heights into this canon, and all that it needs is water and a few trees or seeds and nature will do the rest. Peaches, cherries, grapes and apricots are the most profitable products of this district. The orchards are not continuous, but every few miles the rocky bluffs of the canon give way to enclose strips of level land of twenty, forty, or sometimes several hundred acres, which are planted to trees or otherwise devoted to horticulture. The fruit produced here is of unsurpassed lusciousness and size, and it is ready for market earlier than that produced at other points, except immediately contiguous to the Columbia river. A bunch of grapes picked from a Snake river fruit farm was awarded first prize at the World's Columbian Exposition at Chicago.

In this district perhaps the most highly developed fruit section is at Vineland, Asotin county. The valley here expands so as to embrace about 8,000 acres, which is irrigated, the water being brought from Asotin creek. What was formerly a semi-arid tract has been converted into a "Vineland," a garden of delights. Land here has attained a high valuation, \$1,500 having been paid for a single acre. Although the general range of prices for improved lands would be from \$500 to \$750.

2. The Walla Walla District.

Though Walla Walla county has now been compelled to yield first place to Yakima, yet here are the oldest, largest and most noted orchards and the largest nurseries. The level valley here

ten miles in width, is densely settled in twenty, forty and sixty-acre tracts. Peaches, cherries, apples, prunes, pears, apricots, nectarines, grapes, all of the small berries, melons, canteloupes, and every species of vegetables are produced here in large quantities. During the year 1902 there was shipped from Walla Walla city 449 carloads of fruit and vegetables. There was also a large additional amount shipped from other way stations in the vicinity, in addition to a considerable home consumption. The crop for 1903 seems likely to exceed that of 1902. Two miles west of Walla Walla is the Blalock orchard, the largest in the state. The entire ranch embraces 900 acres, 480 acres in fruit trees, and the remaining portion mostly in alfalfa. There are 40,000 bearing fruit trees, a large number of fruit-dryers, warehouses, etc., and a railway station on the place. The bulk of fruit raised is apples, cherries and prunes. The amount of fruit raised on this ranch for the year 1902 aggregated 100 carloads. In the management of such a large orchard and the proper disposition of the waste fruit there are certain side issues which constitute an extensive business in themselves and add largely to the profits. In the year 1902, 600 tons of non-marketable fruit were converted into 75 tons of jelly, which was readily disposed of, proving to be a profitable side issue. Five hundred barrels of cider were made. One hundred beef cattle and 1,300 hogs were fed on the refuse of the fruit and alfalfa. One hundred carloads of alfalfa hay were shipped and sold. One hundred and ninety-four stands of Italian bees produced 7,000 pounds of comb honey and 1,200 pounds of strained honey.

The valley lands of Columbia and Garfield counties, though smaller and less developed, are similar to those of Walla Walla, and when improved produce the same character of fruit.

3. The Highland District.

In the Highland district we may include the counties of Whitman, Spokane, Lincoln, Douglas and other northeast counties. A different sort of problem presents itself in connection with these high lands. Their elevation ranges from 2,000 to 3,000 feet. The soil is of the most fertile character, the rainfall more abundant and the surface rolling. The spring is a month

later than in the low valleys. Late frosts and the coming of cool weather with early autumn rains makes it unprofitable to attempt the raising of peaches or other delicate fruits for shipment, and the production of early vegetables for market is not attempted to any extent. This section, however, produces the choicest winter apples, pears and some other fruit, also the finest potatoes, onions and all other staple vegetables. It is conceded by all that this section of country surpasses in winter apples. For flavor, coloring, freedom from pests and all the other desirable qualities of the apple, "the great commoner" of fruits, the high, cool, rainy fertile belt here found, is the place. Practically all of eastern Whitman and Spokane, as well as large portions of Lincoln, Douglas, Okanogan, Stevens, Columbia and Garfield are suited to this sort of horticulture. Hence to the homeseeker, who likes such a location, it may be said that although the profits are not so phenomenal as berry lands of Western, or the irrigated orchards of Eastern Washington, yet the expenses are not so great nor cost of land at all the same as in those more favored places. Good land for winter apples, potatoes and other vegetables can be purchased in the Palouse country for \$35 and \$40 per acre. Neither irrigation nor fertilizing is necessary, no special rush in marketing is required, and there is always a demand. There is always a good deal to be said for the land of the winter apple. During the past year an enormous number of fruit trees have been planted in the various counties of Eastern Washington. As illustrating this we have from the horticultural commissioner the statement that in the following counties were planted trees, as follows: Whitman county, 200,000; Spokane county, 250,000; Chelan county, 350,000; Yakima county, 700,000. A large number of these trees have been planted as adjuncts to farms. As showing the great value of the fruit industry in the Palouse country we will quote from statements made by Rev. T. W. Walters, who owns a 320-acre farm near Colfax, Whitman county. He has twelve acres in orchard, and says that this twelve acres in orchard pays him better than the remainder of his farm, which is devoted to wheat raising. Also from Mr. Edward Johnson, another owner of an orchard in that county, who, from two-thirds of an acre of cherries in the year 1902 sold \$460 worth of fruit, and from



CELERY GROWN IN SNOHOMISH COUNTY.



AN EVERETT STREET SCENE.

one-half of the pickings for this year, the price being unusually low, he had received \$226.

The State Agricultural Commissioner estimates that the output of fruit and vegetables in the Palouse country last year was about the same as that of the Walla Walla district.

NURSERIES.

With the ever increasing demand for nursery stock, due to the large increase in the acreage of fruit trees, this is destined to become a considerable industry in the state. While in the past the greater part of the nursery stock has been imported from other states, it is becoming known that the native stock is superior and we can note a marked increase in the industry. The fact that much of the nursery stock that has been received is diseased and comes in poor condition, has been a stimulus. All the conditions requisite are here possessed; that of climate and soil, the best, and there is no reason why we should not produce all the nursery stock required in the state and become an exporter to other states.

Seed and Bulb Growing:

It is an established fact that the soil and climate conditions are suitable to the cultivation of bulbs, the soil being well supplied with phosphoric acid, an essential to plant growth, is an element in the production of bulbs. The experiments heretofore made in this respect have been most encouraging and there have been produced in this state bulbs of the finest quality. Bulbs have been imported from Holland and Belgium and upon their reproduction here it has been found that they would produce in two or three years time three to five bulbs, against one produced elsewhere. It is also stated that the Easter lily, which is produced in such abundant quantities in Porto Rico, produces well in this state when properly cared for. The profits of this business are fabulous, and there is enough good bulb producing land on Puget Sound to supply the world.

What is true as to the production of bulbs, also applies to the production of seeds. The garden seed industry is becoming a feature on Puget Sound, where it is said that the finest seeds are produced. The Puget Sound Seed Garden is located near La Conner, under the management of A. G. Tillinghast. The

product being chiefly cabbage seed, and is grown for an eastern seed house. There are others engaged in the same line of business elsewhere, and a high quality of seed is produced.

MARKET GARDENING.

All varieties of vegetables are successfully grown in the different parts of the state. Around the larger cities will be found hundreds of acres being cultivated in garden truck, upon which hundreds of men are employed, and from which thousands of tons are annually produced, being chiefly marketed in the cities. However, much of the product of these gardens finds its way as supplies on board the numerous vessels, sailing from Puget Sound and large shipments are made to Alaska. An acre or two of bottom land, well cultivated to these crops affords a good living for an ordinary family.

CONCLUSION,

In concluding this survey of our horticultural interests we quote from the last report of Mr. Van Holderheke, his prophesy that horticulture will some time be the chief industry of the state, and certainly when we come to consider his estimate of rate of planting trees it would seem that he has strong reasons for his belief. He is of the opinion that 2,000,000 trees were planted in 1902, and a still larger number will be set out in 1903. He estimates the production of fruit for the entire state in 1902 at 4,125,000 boxes, worth approximately \$6,000,000. There are now about 200,000 acres of fruit trees in the state, and it must be remembered that horticulture is just begun.

THE LUMBER INDUSTRY.

Of all the vast and varied resources of the State of Washington, that which has been for sometime to come will continue to be the source of greatest wealth, is the lumber industry. In what we term the maritime section in our first chapter—the section lying between the Pacific ocean and the Cascade mountains—the prevailing characteristic is timber. This entire section, excepting where the hungry axe of the logger has made its inroads, is covered with dense forests. The lumber industry of the state has progressed enormously in the past few years, as is shown by the phenomenal increase of lumber shipments, both foreign and domestic, from this state. An evidence of Washington's pre-eminence in this line is found in the fact that a great many of the leading timber operators of Michigan, Wisconsin, and other middle west states are dismanteling their mills and removing them to this state.

But enormous as is the present amount and value of the timber product of this state, the lumber business is still in its infancy. Simply the fringe of the great forests have been touched as yet; the main bulk of them still standing. That this is not a fanciful statement may be gathered from a perusal of the official figures, which show that there is more standing timber in Washington than in all the Yellow Pine states put together. All the Lake states combined cannot show as much marketable timber as is to be found in this state. Two years ago in our report we gave the official governmental estimate of standing timber in this state at 114,608,719,000 feet, but those figures have to be revised as the United States geological survey, by its last report, estimates the amount of standing timber at 195,237,000,000 feet, and amount which would permit an annual output of nearly two billion feet by the mills of this state and still last one hundred years. The estimate, showing the kinds of timber is herewith

given and only includes red and yellow fir, hemlock, cedar, yellow pine, Ambilis fir, spruce, larch and white fir;

Table No. 1.

<i>Species</i>	<i>Feet, B. M.</i>
Red fir.....	90,593,000,000
Hemlock.....	40,571,000,000
Cedar.....	22,646,000,000
Yellow pine.....	13,082,000,000
Ambilis fir.....	8,788,000,000
Spruce.....	8,221,000,000
Larch.....	4,776,000,000
White fir.....	1,780,000,000
Other species.....	4,780,000,000
Total	195,237,000,000

Table No. 2.

The following shows the quantity of timber in each county, with the distributed areas of timber, logged and burned land:

COUNTY.	<i>Total Stand, Ft., B. M.</i>	<i>Timber Sq. Mi.</i>	<i>Cut. Sq. Mi.</i>	<i>Burned Sq. Mi.</i>
Adams.....				
Asotin.....	80,000,000	105	6	
Chehalis.....	27,633,000,000	1,714	140	60
Chelan.....	3,095,000,000	2,665	26	97
Clallam.....	25,743,000,000	1,370	113	236
Clarke.....	712,000,000	119	20	498
Columbia.....	183,000,000	164	182	
Cowlitz.....	7,493,000,000	646	82	385
Douglas.....	31,000,000	49	6	
Ferry.....	1,667,000,000	2,270		5
Franklin.....				
Garfield.....	150,000,000	125	70	
Island.....	430,000,000		283	
Jefferson.....	20,691,000,000	1,211	81	158
King.....	11,857,000,000	1,289	361	393
Kitsap.....	1,141,000,000	210	175	22
Kittitas.....	3,171,000,000	941	94	118
Klickitat.....	743,000,000	825	26	31
Lewis.....	11,376,000,000	1,396	71	813
Lincoln.....	12,000,000	63	200	
Mason.....	7,029,000,000	729	199	31
Okanogan.....	3,381,000,000	4,468		
Pacific.....	7,813,000,000	764	56	65
Pierce.....	10,868,000,000	1,079	200	76
San Juan.....				
Skagit.....	11,098,000,000	1,576	196	12
Skamania.....	11,871,000,000	1,209	31	459
Snohomish.....	10,892,000,000	1,252	252	119
Spokane.....	716,000,000	530	585	8
Stevens.....	2,702,000,000	3,643	23	159
Thurston.....	2,787,000,000	430	161	66
Wahkiakum.....	2,974,000,000	173	38	40
Walla Walla.....	6,000,000	33	14	
Whatecom.....	2,109,000,000	1,387	170	636
Whitman.....	35,000,000	19	109	
Yakima.....	4,148,000,000	1,788	117	139
Totals.....	195,237,000,000	34,245	4,042	4,620



SOME TIMBER SCENES.
A spruce log cut in Chehalis County.

Fir.

The fir tree of Washington, known as "the Douglas Fir," but erroneously styled in the East, "Oregon Pine," has no equal among the timbers of the world in the variety of uses to which it can be put. According to careful tests made both by government and railroad timber experts, the Douglas fir has been proven to be stronger than oak. The tall, straight bole of this tree, standing as it often does two hundred feet without a limb, makes it beyond all doubt superior to any other wood for ship timbers, spars and masts. It is now used in nearly all of the car shops of the country for car sills. It is also used for bridge timbers, semiphores and all other lines of railway construction, being especially valuable for structural work where great spans are required. It also makes first-class flooring and finishing lumber.

Cedar.

Next in importance as a commercial timber is cedar, now the recognized shingle material of the country. The Washington cedar shingle is coming more and more into use and is being shipped to every part of the United States.

Spruce.

Spruce is a white wood resembling white pine. It is fine grained, light in weight and is the box and shelf wood of the country. It is free from pitch or odors of any kind and on this account is coming into favor as weather-boarding for houses.

Hemlock.

Large tracts of hemlock are found in Western Washington. It differs in many important particulars from the hemlock of the Atlantic Coast. It makes fine lumber, is easily worked, takes a beautiful finish, and like spruce, is well adapted for box material, shelving and finishing lumber. It is also valuable for its bark, which contains a higher percentage of tannin than eastern hemlock. It has also been demonstrated by careful and prolonged tests that hemlock is about the only ant-proof lumber. This is an important consideration, considering our increasing lumber trade with tropical countries where the ant pest is a serious problem.

Yellow Pine.

Yellow pine is the predominating timber of Eastern Washington, but tamarack, white pine and a great many other varieties of more or less value are also found in that section.

The products of our Washington saw mills find a market in all of the western and northern states of the union and in almost every country in the world. The total lumber shipments for 1902 were 1,134,147,000 feet, an increase of several million feet over the preceding year. The annual shipment of shingles was 5,128,480,000 pieces.

As showing the increase of lumber production and the extent of our market, we quote the following statements and figures from the *Pacific Lumber Trade Journal*:

“The aggregate shipments of lumber from Washington for the first six months of 1903, total the enormous amount of 679,000,000 feet.

“The gain shown by the totals of both rail and cargo shipments for the first half-year of 1903 and that of 1902, amounts to 130,171,041 feet, or 27.3 per cent. The gain recorded for the first six months of 1902 amounted to 34 per cent, or expressed in feet, 140,118,172. The cargo trade shows a healthy increase over last year's figures for the same period, the actual increase being 74,596,041 feet, or 26.6 per cent, against a gain of 33,603,172 feet, or 15 per cent for the first half-year of 1903. The rail business likewise is on the increase, as shown by a gain in shipments aggregating 55,575,000 feet, or in percentages, 20.3. This stands against the increase of last year's figures of 106,515,000 feet, the percentage of gain of 1902 over 1901 being 65 per cent.

“Particularly gratifying should be the showing made in the foreign trade, as the principal consuming countries have a healthy increase marked up against them, in contradistinction to the record of August, 1902, which showed a heavy falling off in foreign shipments, especially to those countries which the mills shipping cargo look to for the bulk of the consumption. As, for instance, South America shows a gain in round numbers footing up close to 5,000,000 feet. Australasia 14,000,000 feet, China 4,000,000 feet and Germany an increase of 882,207, although as compared with the shipments of 1901 this latter figure would represent a loss. Perhaps the greatest gain in the whole of the cargo foreign destinations is shown in the United Kingdom, with a gain aggregating over 8,000,000 feet, the shipments standing 8,976,736 for 1903, as against but 821,751 for last year. Mexico and Central America shipments are about equal, while in the case of Japan, the falling off is the heaviest of any country the Washington mills ship to. For 1902 the August tables show total shipments of 1,589,880, while for the present year the cargoes amount to but 283,966 feet. This is again offset by the gain shown in South Africa. For the first six months of 1902 the South

African ports took lumber amounting to 5,753,903 feet, while against that record stands the shipments of the first half of 1903, totaling 16,365,153 feet, a gain approximating 200 per cent.

"Figures of the domestic cargo trade are alike interesting and instructive, showing that the ability of California to consume Washington lumber seems to be limited only by the number of vessels that can be accommodated and the capacities of some of Washington's best mills. As a factor of the growth of the Golden state, nothing could serve as a better criterion than the gain of 6,000,000 feet so far this year, referring to the shipments from January to the 1st of July. At this rate of increase, amounting approximately to 12,000,000 feet in a year, should the same ratio of trade hold the balance of the year, the land of sunshine, fruit and flowers will have received of Washington forest products lumber amounting to 415,000,000 feet. And it is reported from the southern sections of California that even with these heavy shipments charged up against the state, retailers complain of an inability to get enough lumber for stock purposes."

Perhaps the greatest percentage of increase of any port taking any quantity of Washington lumber is the showing made by Manila. The figures for the first six months of the present year foot up to 17,823,973, against 1,942,343 feet for the same period of 1902. This is a clear gain of 16,000,000 feet of lumber in six months to one port.

The following summary of the business for the half-year and the corresponding period of 1902, gives the totals of the business in a comprehensive manner, enabling a comparison of the shipments by rail and ocean.

Table No. 3. Grand Totals. Rail and Ocean Shipments.

	1903.	1902.
Cargo lumber (feet)	352,707,742	278,111,701
Domestic lumber (feet).....	253,409,993	223,456,783
Foreign lumber (feet).....	99,297,749	54,654,918
Rail lumber (feet).....	326,250,000	270,675,000
Rail lumber (cars).....	21,750	18,045
Cargo and rail lumber (feet).....	878,957,742	548,786,701
Rail shingles (pieces).....	2,882,080,000	2,453,600,000
Rail shingles (cars).....	18,013	15,335
Rail shingles and lumber (cars).....	39,763	33,380
Cargo lath (pieces).....	63,803,331	50,054,732

Table No. 4. The Cargo Trade by Months.

	1903.	1902.	1901.
January.....	45,993,248	39,682,463	38,436,565
February.....	41,103,407	43,477,916	33,351,232
March.....	74,673,772	46,671,477	49,346,299
April.....	68,079,050	52,798,648	36,380,163
May.....	51,931,535	47,156,281	45,416,742
June.....	70,926,730	48,324,916	41,577,537
Totals	352,707,742	278,111,701	244,508,529

Table No. 5. Shipments by Carload.

	1903.	1902.	1901.
January.....	2,840	2,186	1,116
February.....	3,667	2,426	1,373
March.....	2,999	2,969	1,917
April.....	4,013	3,306	1,991
May.....	3,958	3,592	2,256
June.....	4,273	3,566	2,291
Totals.....	21,750	18,045	10,944

Table No. 6. Rail Lumber in Feet.

Reducing the above table to board measure gives the following result:

	1903.	1902.	1901.
January.....	42,600,000	32,790,000	16,740,000
February.....	55,005,000	36,390,000	20,595,000
March.....	44,985,000	44,535,000	28,755,000
April.....	60,195,000	49,590,000	29,865,000
May.....	59,370,000	53,880,000	33,840,000
June.....	64,095,000	53,490,000	34,365,000
Totals.....	326,250,000	270,675,000	164,160,000

Table No. 7. Grand Totals by Months.

	1903.	1902.	1901.
January.....	88,593,248	72,472,463	66,777,416
February.....	96,108,407	79,867,916	53,946,232
March.....	119,658,772	91,206,477	78,101,299
April.....	128,274,050	102,358,648	66,245,162
May.....	128,274,535	101,036,281	79,256,747
June.....	135,021,730	101,814,916	75,942,533
Totals.....	678,957,742	548,786,701	408,668,529

Table No. 8. Cars of Shingle Shipments.

	1903.	1902.	1901.
January.....	2,300	1,658	1,144
February.....	2,631	1,680	1,537
March.....	2,737	2,747	2,461
April.....	3,288	3,032	2,434
May.....	3,699	2,971	2,520
June.....	3,358	3,247	2,590
Totals.....	18,013	15,335	12,686

Table No. 9. Number of Shingles by Month.

	1903.	1902.	1901.
January.....	368,000,000	265,280,000	183,040,000
February.....	420,960,000	268,800,000	245,920,000
March.....	437,920,000	439,520,000	393,750,000
April.....	526,080,000	485,120,000	389,440,000
May.....	591,840,000	475,360,000	403,200,000
June.....	537,280,000	519,520,000	414,400,000
Totals.....	2,882,080,000	2,453,600,000	2,029,760,000

Table No. 10. Grand Total of Carloads.

The table given below is that of the total number of cars of lumber and shingles by months:

	1903.	1902.	1901.
January.....	5,140	3,844	2,260
February.....	6,298	4,106	2,910
March.....	5,736	5,716	4,378
April.....	7,301	6,388	4,425
May.....	7,657	6,568	4,776
June.....	7,631	6,813	4,881
Totals.....	39,763	33,380	23,630

It is not only the value of the timber itself or the lumber when manufactured that is a benefit to the State of Washington, though the annual output amounts to more than \$35,000,000, but it is the fact that the lumber industry gives employment to an army of men. There are employed in the various branches of this industry upwards of 30,000 men. Take Whatcom county as a concrete example. According to reliable statistics there are employed in the saw mills of this county 1,300 men, who in 1902 received the sum of \$642,508. In the shingle mills of the county 2,000 men are employed, at an average wage of \$3 per day, making an approximate annual pay roll of \$1,500,000, making allowance for all shutdowns. This amount, taken with the pay roll of the saw mill men, brings the annual pay roll for those engaged in making the finished product to more than two million dollars. When we take into account also the wages earned by the men engaged in cutting shingle-bolts, logging and other kindred industries, it is easy to see that in Whatcom county and in every other county of Western Washington the lumber business makes the most important contribution to the general prosperity.

THE FISHERY INDUSTRY.

No other state is so rich in its fishery resources as is Washington. The Columbia river on the south, more than 150 miles of seacoast and Willapa and Gray's harbors on the west, the Strait of Juan de Fuca and Puget Sound in the northwest, and innumerable lakes and rivers all over the state, all furnish a home, food and a refuge for many of the finest fish the world knows; and the taking, packing and shipping of these furnishes profitable investment for millions of dollars, and pleasant and lucrative employment for thousands of men.

SALMON.

Of all the fish the salmon are of first importance, and of all the salmon the Royal Chinook is king. Although they are found all along the coast from Alaska to Central California, the Columbia river seems to be the favorite home of this prize fish. Bold, daring fishermen drift far out over the bar to meet them as they come in from the sea, and from this on, every foot of the hundreds of miles to the spawning-beds at the headwaters of the Columbia or the Snake, or at the foot of some glacier at the very beginning of some of the larger tributaries, is beset with dangers to the royal visitors. In the lower river, with Astoria and Ilwaco as headquarters, hundreds of fishing-boats with their gill nets go out into the stream every day and night during the run, and usually return in a few hours loaded to the gunwale with these magnificent fish. All along the shore, and reaching out into deep water as far as the law allows, are the more dangerous traps; ingenious devices which, when once set, work day and night, through fair weather and foul, often becoming so filled with fish that it is with great difficulty that they are lifted at all. Further up the river the beach-seines and the fish-wheels are found, each taking their share of the countless numbers of fish that have escaped the dangers of the lower river. Although many canneries and packing-houses, each handling thousands of fish every hour, are found all along the lower Columbia, the catch is often so great that it is impossible to care for all the fish. The total value of the salmon output for the

Columbia river district for 1902 was \$748,932. This year the total output will be much greater, for the run of fish this season was one of the best known for years.

Besides the Chinook or Columbia river salmon, all the other species of salmon are found in greater or less numbers in the Columbia, the "blue backs" often forming a considerable part of the total pack.

The sturgeon, which in former years were very abundant here and often reached a weight of from 300 to 500 pounds, are still taken in considerable numbers. The Columbia river smelt, the finest of its kind, is taken in immense quantities. The introduced shad and catfish, as well as many other less important native fish, all add their share to the fishery resources of this district.

In Willapa and Gray's Harbor three species of salmon and several other fish of greater or less importance are taken in considerable numbers. It is on Puget Sound, however, that the salmon industry reaches its largest proportions. Although the Chinook, or "Spring" salmon, as it is more commonly known here, and the Silvers, Chums and Steelheads all form important parts of the catch, the Sockeye, in point of numbers, far overshadows them all. The beginning of each season sees large fleets of vessels of all kinds around the San Juan islands, and as far north as Point Roberts, waiting the news from the outlooks that the sockeyes have entered the Straits. Only those who have been among the fisher-folk can know the intensity of the strain, and anxiety of the days before the run commences, for upon the success of the season's catch depends the winter's supply of food, clothing and the comforts of life to hundreds of loved ones at home who are waiting as anxiously as any for the first news that the fish have commenced to run. Some years the fish come sparingly at first, gradually increasing in numbers until the season is at its height; at other times they will come rushing in from the sea in such overwhelming numbers that the water seems alive with them as they come leaping and tumbling over one another in their seemingly frantic desire to reach fresh water, where their spawning-beds are found. At such times the gill nets are filled, the purse seines can hardly be drawn into the scows and the traps require constant watching and attention

or they soon become so packed that it is almost or quite impossible to lift them. Although last season was not a year for the big run, the total value of the salmon pack on Puget Sound was \$3,094,445, while the value of the fresh, salted and smoked product would amount to perhaps a million and a half more.

HATCHERIES.

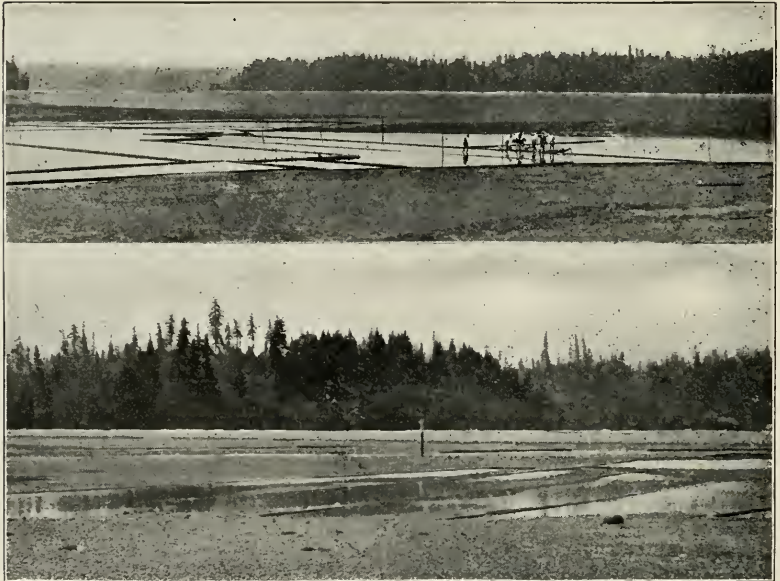
It became apparent several years ago that the supply of salmon would not always equal the ever-increasing demand, unless some provision was made to assist nature in keeping up the supply. In 1895 the first salmon hatchery was established on a tributary of the Columbia river, and since that time seventeen other hatcheries have been established in various parts of the state, each with a capacity of from four to eight million fish each season. It is due to the work of these hatcheries that we see the supply of salmon increasing rather than decreasing. In order that the work at the hatcheries may be of the highest order possible, and that the latest and best methods known to science may always be used, a fisheries experiment station has been established in connection with the fisheries department, where the salmon and other fish are studied and experimented with in a scientific way, and the department is thus enabled to answer intelligently many of the perplexing problems that are constantly coming up.

This has been one of the most successful years in hatchery work that has been experienced in this state, a much larger amount of spawn having been taken than has ever been gathered in any previous year. Following is a list of the state fish hatcheries, with the capacity of each:

NAME OF HATCHERY.	Capacity.	Location.
Kalama	8,000,000 fry.	Kalama river.
Chinook .....	.....	Chinook river.
Chehalis	6,000,000 fry.	Chehalis river.
Whiteriver .....	.....	Soos creek.
Samish	5,000,000 fry.	Friday creek.
Wind river	5,000,000 fry.	Wind river.
Klickitat .....	.....	Klickitat river.
Dungeness	5,000,000 fry.	Dungeness river.
Skokomish	8,000,000 fry.	Skokomish river.
Stillaguamish .....	.....	Stillaguamish river.
Snohomish .....	.....	Sultan river.
Nesqually .....	.....	Nesqually river.
Nooksack .....	.....	Nooksack river.
Little Spokane	2,000,000 fry.	Little Spokane river.
Wenatchee .....	.....	Wenatchee river.
Colville	2,000,000 fry.	Colville river.
Methow	3,000,000 fry.	Methow river.



A FEW SALMON.
Being Prepared for Shipment.



CULTIVATING THE OYSTER.

Photographs Furnished by Prof. R. W. Doane, Manager Pacific & Eastern Oyster Co.

Halibut.

Within the last few years the halibut fishery has been assuming considerable importance. As the season opens in the spring scores of sloops and small schooners run out to the fishing grounds off Cape Flattery, and as fast as they are loaded bring their prizes to Seattle, Tacoma or Whatcom, from which points they are shipped to all parts of the country.

Other Varieties of Fish.

Smelt, herring, sardines, anchovies, bass, rock cod, rock fish, black fish, ling cod, true cod, sole, flounder, hake, shad and many others are all found abundantly in season, and as the seasons are various the markets are always well filled with a choice variety of first-class fish, from which one may select to suit their taste or fancy.

To the sportsman who finds in the singing of the brook and the cheery music of the reel more enjoyment than in the more strenuous chase, our beautiful mountain lakes and clear, cool streams where the "speckled beauties" abound, offer attractions such as can be found in no other section of the country.

SHELL FISH.

In speaking of our fishery resources, we are apt to think only of the finny tribe. Important as these are, there is another branch of this industry that bids fair to soon rival our great salmon industry. Few who have not carefully investigated the matter realize the wonderful resources of the thousands of acres of tide flats left bare by the receding tides, the home of the oyster, clam and other shell fish.

Native Oysters,

For many years the gathering and marketing of our native oyster has furnished profitable employment for oystermen, both on Puget Sound and Willapa Harbor. The oyster occurred naturally over large areas in both these places, but at present these natural beds are much more restricted, and the market now receives its supply wholly from cultivated beds, some of which depend on the natural beds for their seed supply, others raising their own seed. Various methods of cultivation are used, but the most effective and most profitable consists in

building low dykes so as to keep a little water over the beds at all times. Good land thus dyked and well seeded is valued at from \$1,000 to \$10,000 per acre, and yields an annual profit of from \$500 to \$2,000 per acre.

Eastern Oysters.

For a number of years small shipments of eastern oysters have been made and planted in these waters, where they have made a remarkable growth and attained an unsurpassed flavor. Recently large companies have been organized to engage in this industry, and the success attending the experiments already made has shown this to be one of the best investments for capital that can be found. Those interested in this industry should send to the secretary of the Puget Sound and Eastern Oyster Company, Whatcom, Washington, for one of their free illustrated pamphlets on oysters and oyster culture.

Clams.

Many species of clams are found along all the beaches, the razor clam of the sandy sea beaches, and the butter clam, little neck, Washington, soft-shelled, cockle and geoduck of the inland seas being among the most important. The day is not far distant when a good clam bed, well cultivated, will be among the most valuable property in the state.

Crabs.

Although many species of crabs occur in our waters, only one is at present of commercial importance. The crab industry, which centers principally around Dungeness and Blaine, although already of considerable importance, is still in its infancy and offers an attractive field for development.

Shrimp.

More than a dozen different species of shrimp are found in the deeper waters of the sound, but as this industry too is only just being developed, the methods of taking and handling the product are not perfected, and although several small steamers are now engaged in gathering and marketing three or four of the larger species, the supply does not nearly meet the demands of the market.

The fisheries industry of the state is divided into four districts, which we give in order of their importance, *i. e.*, Puget Sound district, Columbia River district, Willapa Harbor district and Gray's Harbor district.

As to the importance and value of this industry, we quote the following figures from the report of the fish commissioner, who has all to do with this industry in the state :

Amount of capital employed in industry.....	\$6,819,218
Number of persons employed.....	10,695
Earnings of labor.....	2,501,650
Total value of output.....	6,731,870

In addition to the foregoing, the value of the output of the oyster industry amounted to \$296,750.

MINES AND MINING.

One of the great resources of the State of Washington that with development will increase in importance as well as in value, is its mineral deposits. It is a well known fact that in the development of mines vast sums of money have been expended in prospecting and opening properties before they are on a paying basis, and it is also a well known fact that the majority of prospects prove to be failures as mines. Yet there is a fascination in the discovery and development of mining properties which will always induce people to pursue the business, and hence it is that in all parts of the world where mineral deposits actually exist the means will be found for their development.

Since mining has so far developed in this state as to establish its permanence and great and lasting value, we consider it not only a feature but one of the important industries of the state.

We have treated the subject under two separate heads, *i. e.*, Coal Mines and Measures and Metal Mines. Perhaps the most important, and certainly the best developed, branch of the mining industry is coal mining, and since it is an old industry of the state, we treat that division of the subject first.

COAL MINES AND MEASURES.

Coal was mined in the State of Washington, or what is now the State of Washington, by the hunters and trappers of the Hudson Bay Company as early as 1842. Since then it has developed into one of the most valuable resources of the state. The grades of coal mined vary from rich bituminous coking coal to brown lignites. The richer bituminous coal contains a very large percentage of volatile hydro-carbon, and makes a grade of coke equal to that produced in the Connellsville district of Pennsylvania. In steam value the Washington coal has been proven by Government evaporating tests to be practically

on a par with British Columbia coal, which has long been the standard on this coast. The lower price at which the Washington coal can be sold more than offsets any other advantage held by the British Columbia product. The coal mines of the state are under the management and supervision of as competent coal mining experts as there are in the country. Up-to-date machinery and the best of safety appliances are in use and every precaution is taken to protect life and property. There has been a noticeable lack of explosions or disasters in the coal mines of Washington, a fact which is due in some degree to the rigid state inspection to which all coal mines are subjected. The relations between operators and employes have been very amicable, there not having been any strikes or lockouts within the past two years.

MINES AND COAL FIELDS BY COUNTIES.

Kittitas County.

Roslyn Mine.

This mine is situated at Roslyn and is owned by the Northwestern Improvement Company. It is on the eastern slope of the Cascade mountains, and is the largest mine in the state, having this year broken all previous records, producing 1,039,870 tons. There are 1,299 employes, working 300 days. This vein has four and one-half feet of clean coal between sand-rock walls, with a dip of from 13 to 26 degrees. There has been 1,500 acres of coal worked out, producing 7,000,000 tons of coal, leaving about 45,000,000 tons available in the Roslyn field.

Cle Elum Mine.

This mine is also owned by the Northwestern Improvement Company. For 1902 it produced 212,587 tons of coal, operating 300 days. It has 301 employes. The coal is similar to that mined at Roslyn.

King County.

Franklin No. 7, Franklin.

Produced in 1902 72,238 tons of coal, working 303 days with 143 employes. The mine is 2,850 feet deep on the slope.

The Gem Mine, Franklin.

This mine produced 52,735 tons of coal in 1902, with 62 employes working 293 days. The vein is three feet thick and has a dip of 35 degrees.

The Lawson Mine, Franklin.

Produced 107,750 tons of coal in 1902, working 301 days with 178 employes. The vein is four and one-half feet thick, with dip of 58 degrees. Depth of 1,450 feet.

Franklin No. 1, Franklin.

Recently opened and produced in 1902 65,107 tons with 142 employes, working 287 days.

Coal Creek Mine, New Castle.

This mine produced 140,841 tons in 1902, working 244 days, with 181 employes. Veins average about six feet of coal.

All the above-named mines are owned by the Pacific Coast Company, and are on the line of the Columbia & Puget Sound Railroad.

Black Diamond Coal Company, Black Diamond No. 14 and Morgan Slope.

This mine produced 258,996 tons of coal in 1902, working 299 days with 450 employes. This is the noted McKay vein, which is six feet of clean coal, requiring neither washing nor picking.

Seattle, San Francisco Railroad & Navigation Company, Ravensdale.

This mine is located on the Palmer cut-off, three miles north of Black Diamond. Its output was 71,426 tons of coal, with 157 men working 208 days.

Issaquah Coal Company, Issaquah.

This mine produced 117,184 tons of coal, operating, 281 days with 200 employes.

Seattle Electric Company, Renton.

The Renton mine produced 104,071 tons of coal, with 256 employes working 256 days.

Pierce County.**Carbonado, Carbon Hill Coal Company.**

The mine of this company had an output of 169,733 tons of coal, with 256 men working 235 days. The vein is four feet thick and the coal is sold to the steamboat trade.

Wilkeson, Wilkeson Coal & Coke Company.

Output of this mine was 106,896 tons, 184 employes working 299 days. One hundred coke ovens are in constant operation at the mine, from which 22,800 tons of coke were taken this year.

Burnett, South Prairie Coal Company.

Output of mine for 1902 was 32,003 tons of coal, with 104 employes working 150 days. The product of this mine is excellent for manufacture of gas.

Fairfax, Western American Company.

The mine produced 32,117 tons of coal, 100 employes working 304 days. Sixty coke ovens are in operation, which produced 17,168 tons of coke for the year.

Wilkeson, Gale Creek Company.

This mine has an output of 29,640 tons of coal, with 68 men working 203 days. The coal is of coking quality.

Melmont, Northwestern Improvement Company.

The product of this mine for 1902 was 24,000 tons of rich bituminous coking coal. It has just been opened, and there are five working veins of 32 feet aggregate thickness.

Skagit County.**Cokedale, Skagit Coal and Coke Company.**

The mine of this company is located on a branch of the Great Northern Railway about four miles from Sedro-Wooley. In 1902 it produced 19,017 tons of coal, working 296 days with 80 employes. The mine is equipped with sixty coke ovens.

Whatcom County.**Blue Canyon, Blue Canyon Coal Mining Company.**

This mine is located on the east shore of Lake Whatcom. There were 36 men employed in 1902, who worked 298 days and produced 6,110 tons of coal.

PROSPECTS.

Measures are being developed on the Carbon river above Fairfax, Pierce county, east of Squak lake in King county, near Snoqualmie Falls, King county, at Bucoda, Thurston county, near Cowlitz Pass in Yakima county, in the Mt. Baker region of Whatcom county, and in various parts of Lewis county.

Coal mining in Washington is still in its infancy, notwithstanding the large amount of coal which is being mined. Deep prospecting has hardly begun, as the measures of coal that are being worked were developed from exposures on the surface. It can be said with confidence that our present coal fields are practically inexhaustible.

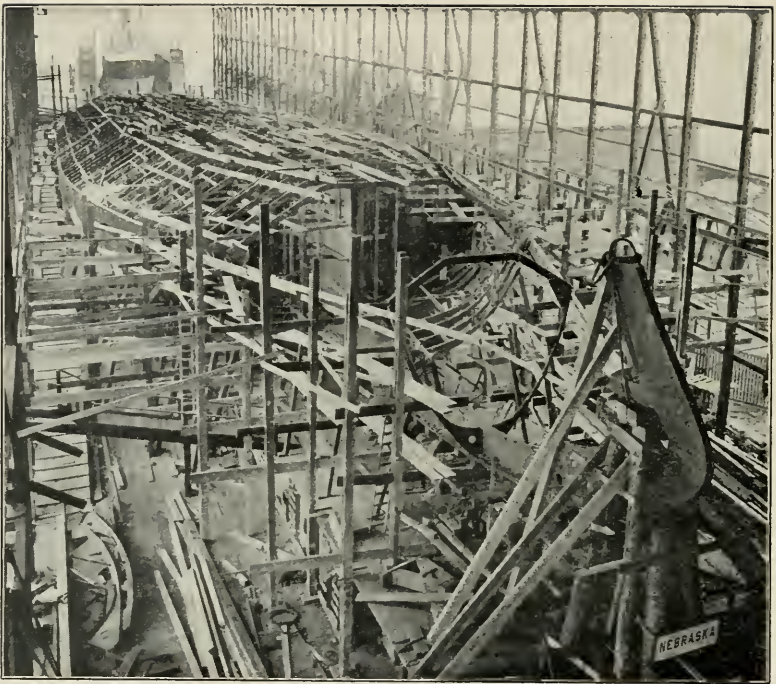
Under Miscellaneous Statistics will be found some tables showing condition of the coal mining industry for the years 1901 and 1902.

METAL MINES.

BY JAMES G. GIVENS.

The backbone of the American continent has mineral for its marrow. What seems to be a broad and strong belt of this mineral is found in the State of Washington, hence mining is destined to fill a leading place among the industries of the state. The effect of mining upon the general prosperity is beneficial, as it brings with it many kindred industries and furnishes a ready market for the farmer, the stock raiser and the manufacturer. What is known of the mineral resources of Washington has been learned by a number of individuals, each of whom has studied a particular section; but a general knowledge of the entire mineral resources of the state is something as yet unknown and unwritten. We know that certain minerals are found in certain sections; that minerals of every kind, precious and base and in all combinations and forms, are to be located and now wait for capital and labor to turn them to man's uses, and make their use tend to his happiness and growth. We know the names of many camps where mines are being opened, we guess at the names of others. Gold is where we find it, and when we talk of mining our thoughts turn involuntarily to the mines of gold locked up in the rocky hills of Washington; but actual knowledge of the development of these mines, and positive results as to their values can be given in comparatively few instances.

Mining in Washington began in the early 60's when the returning tide of miners from the Cariboo district worked the placers on Rock Creek north of the British-American boundary, and washed gold from the gravel of the Pehastin and Swauk creeks in Western Washington. The first quartz ledge to be discovered was on the Pehastin, where the town of Blewett now stands. The gold mine, the Blewett, is still being worked and its products secured by a twenty stamp mill. From the beginning of mining in 1860 up to 1887 little was done except by a few men who worked on placer claims located along creeks and rivers; but with the beginning of the year 1887 the mining business of Washington was fairly begun with the discovery of low



THE BATTLESHIP NEBRASKA.
Under Construction at Moran Bros. Ship Yards, Seattle, Wash.



CONCENTRATOR AT COPPER INDEPENDENT MINE,
Silverton, Wash.

grade silver ores on the Salmon river, and the gold and silver ores of Palmer mountain in Okanogan county. This district became the center of mining excitement and is likely to become so again, as there are large mineral deposits which will claim attention in the future. From this time, 1887, prospectors invaded the Cascade range on all sides and made discoveries during succeeding years in Whatcom, Skagit, Snohomish, Chelan, Stevens and Okanogan counties, and introduced to the world the mining properties of the camps in the Cascades, the Methow, Silverton, Silver Creek, Index, Darrington, the Stehekin, Republic, Slate Creek, and about ten years later came the discoveries in the Mount Baker mining district, which is now the leading district in the state. From 1887 a decided interest in mining was awakened, and it appeared as though mining as an industry had come to stay.

The different districts named were extensively prospected in 1890 to 1892, but the invaders were farmers and mechanics rather than practical men who understood mining. As a result there were many claims located, many prospect holes made, but little accomplished. Speculation and poor judgment worked serious injury to mining. The panic of 1893 and the Spanish-American war, followed by the discovery of gold in Alaska, resulted in work being stopped on many mines, and much property being left vacant while the owners left for Alaska to secure fortunes in the Klondike. Many of these claims lapsed and went back to the government, while on others the assessment work was done year by year, with just as little work as possible to hold the claims. After many of the owners had gone to Alaska and failed or made fortunes, they have returned and are now taking up the work on their original claims again, and developing properties that will mean much to the state. The discovery of gold in Alaska worked an injury on the mines of Washington, as all money for mining investments was turned toward Alaska and the Yukon, and the mines and prospects in Washington were allowed to languish. This condition of affairs has caused many persons, particularly investors in Washington mines, to conclude that there are no mines in Washington because results are so slow about coming in. In spite of all hindrances a few persons held their faith in Washington mines,

and development work was continued under great difficulty; but the mines upon which work has been continuous are very few.

The element of romance which gives fascination to the mining business is strong in the discovery and development of the mines of Eastern Washington, and particularly in the mines about Republic. It is the story of a few men daring the chances and winning great wealth. Republic mining district has done more in the way of enriching the owners of mines than any other district in the state. It has now several steady producers, and the excitement which a few years ago induced such eager speculation has subsided, and Republic has come to possess the quiet airs of an old mining camp. Among the names besides the Great Republic mine which gave its name to the district, there are now the Mountain Lion, the largest shipper in the district at the present time, the Quilp, the Little Cove, and the Knob Hill, all shippers. The Tom Thum, the San Poil, and many other properties are ready to ship ores, but it is now evident to all that the mines here cannot be worked to any great extent until there is a smelter in the vicinity of Republic, and a market for the ores at home.

The most heavily mineralized section of Washington is the Cascades and the west bluffs of the state; there is a great mineral zone crossing Western Washington from north to south, reaching up into the mineral belt of British Columbia and down into Oregon and California. In this belt are minerals of every kind; the most common being iron and copper pyrites, chalcoppyrite, galena, gray copper; bornite, sulphides, gold-bearing copper ore, coal, iron, clay, talc, and free gold is found in many districts. Numerous mines and districts are well known to the state, as some of the most romantic mining ventures have this zone for their field of operations.

□ Beginning at the British Columbia boundary line on the north and west the districts come one after another from north to south, showing the entire west bluff of the state to be well mineralized, with great diversity of minerals. The first district to attract attention is that of Mt. Baker, which lies entirely within Whatcom county. Mt. Baker district proper lies along the north fork of the Nooksack river, extending east to the falls of

that stream, an area of fifteen miles or more in extent, but properties are classed as belonging to Mt. Baker district that are really beyond its confines, thus giving much larger territory to the district than that named. Discoveries and developments have been made from Sumas mountain on the south to Han-negan pass on the north; and the territory within these limits, while it has many prospectors at work, yet is comparatively speaking just scratched by the miner's pick, so numerous and large are the ore bodies, and so well mineralized the district.

The mines of Mt. Baker district can offer what mining investors are seeking at present—immense bodies of low grade ore. The Nooksack mines on Sumas mountain are literally quarries of low grade ore that will, at the lowest, average in the neighborhood of \$6 per ton in gold. The bodies of ore are exposed so clearly on the sides of steep mountains that the ore can be quarried down at an expense of about ten cents per ton, and the ore can be measured by acres in width and mountains in depth and length. There are at the present time three of the Nooksack mines, the Nooksack, the Givens-Nooksack and the Land-Nooksack. All are practically under the same management and owned by the same people. On the Nooksack proper are three four-stamp mills, with crushers, concentrators, trams and all paraphernalia for reducing the ore. The Nooksack company is now preparing to build a two hundred ton cyanide plant for securing the bullion and handling the ore entirely at the mine.

Beside the Nooksack mines there are two other properties in the district that may properly be called mines, having gone through the prospective stage and being now producers. Of these the Post-Lambert is the oldest, having been discovered in 1897 by Jack Post, R. S. Lambert and E. G. Van Valkenberg. This mine is located near the British Columbia boundary, and has been somewhat handicapped up to the present time from lack of transportation, except the most primitive kind—the pack train. The ore is a clean white quartz of uniform width where exposed, carrying free gold and tellurium. The mine is now a producer, and it is said is netting handsome returns to its owners. A ten-stamp mill is in operation, grinding out in

excess of \$1,000 per day. The Great Excelsior, the third producer in the district, was located in 1900. Work on this property has progressed rapidly, the only drawback being inaccessibility; but the Bellingham Bay & British Columbia Railway has completed its line to within nine miles of the mine, so that transportation difficulties are practically over. The Great Excelsior mine is composed of twenty claims. As far as known there are two broad ledges. The ledge now being worked is about seventy-five feet wide, all pay ore. Thousands of tons of rock have been drawn from it, and the average value of the ore is approximately \$3.50 per ton. The mine, quantitatively speaking, is a silver proposition, the ratio of silver to gold being about 2 to 1. Silver is prominent in both native and leaf form. Gold sulphides are found in glittering bunches. A twenty-stamp mill is in operation, and since the 8th of May, 1903, four shipments of concentrates have been made to the smelter. The Henrietta group of claims joins the Great Excelsior. Little work has been done on this property, but its values are being shown by work on the Excelsior ledges, which are the same as the Henrietta. Another property in the immediate vicinity of the Excelsior is the Hoosier mine. Considerable work has been done on this property and a permanent camp established.

There are many other prospects and properties in various stages of development in the Mt. Baker district, but the Nooksack, Post-Lambert and Great Excelsior are all that at the present time may be classed as mines. Of these three the Nooksack mine is nearest to the railway, the Northern Pacific line being but a short distance away with a good road connecting the mine with the railway. The Post-Lambert lies farthest from the railway, everything having to be carried in by pack animals. The Great Excelsior will have a railroad quite near within the season, it being but nine miles away now. It is expected that another season will complete development work on many properties, and that in particular the Mt. Baker-Shuksan, the Saginaw, the Goat Mountain, the Hoosier, the Many Sisters, the Silver Tip, the Twin Lakes and the American Eagle will have mills completed and be producers, and probably some of them dividend payers, as all of these seem earnestly at work.

The Slate creek district, south and east of Mt. Baker district, is located in the Skagit valley at the extreme end of Whatcom county. There are mines here that have passed the experimental stage and will in the near future be ranged as producers. The great drawback to the Slate creek district has been lack of transportation. The mines lie in an unnamed part of the country, and it is practically impossible to take in the necessary machinery for equipping the mines, as the country is wild and the trail crosses over rough mountains. There is a good wagon road, but it is practically impossible to transport heavy machinery, the effort being almost superhuman. In the face of the great difficulties that must be overcome there are now two ten-stamp mills, one five-stamp mill and a cyanide plant at work on the ore in this district. It is confidently expected that two more ten-stamp mills will be erected before the close of another season.

The largest and best developed property in the Slate creek district is the Eureka, once owned by Charles D. Lane, of San Francisco. It had a ten-stamp mill, and it is claimed that the ore that was being worked in this mill carried \$190,000 in gold. This report has been denied by the owners, and the mill was destroyed by incompetent men during the absence of Mr. Lane. The property passed to other hands, and it is intended this year to install a new mill and confirm or deny the statements regarding the value of this ore. The Mammoth, not far from the Eureka, a well known mine in this district, has a ten-stamp mill. This property lies very close to Barron and is situated almost on the divide between Okanogan and Whatcom counties. The nature of the ore is very much like that of the Post-Lambert in the Mt. Baker district, a clean white quartz carrying very high values in free gold. Other properties in this district are the Mountain Goat, with a five-stamp mill and cyanide plant, the Hidden Treasure, a vast copper proposition which can not be opened up until railway transportation reaches this section of the country, and the Chancellor, which has ore assaying very high, the richest of which is being shipped to the smelter and the lower grade ore left on the dump to be worked by the mill, which will be installed later on. Other properties are the North American, the Whistler, the Tacoma, the New

Republic, the Uncle, the Red Badger group, the Anacortes, Silver Quartz and various other prospects with names and without names, all in different stages of development and with transportation, probably valuable to the owners. The talc and asbestos mines, owned and operated by the Washington Talc Company, while not properly belonging to Slate creek, yet lie in the Skagit valley. This property we understand is quite valuable, and while quite a distance from railway transportation with great difficulties to be overcome in order to bring their product to the market, yet we understand that the property is manufacturing and disposing of their product at a profit.

The White Horse district, located near the town of Darrington, the terminus of a branch of the Northern Pacific Railway from Arlington, is the center of a copper-gold field. It has also been reported that large finds of free gold low-grade ores have been discovered within the White Horse district, but none have been reported on officially, and the properties of value in the district are all classed as copper-gold, and it is probable that the developments of the next few years will place Washington as high as a producer of copper as are Montana and Michigan. The claims and prospects are still largely in the hands of the original locators and a comparatively small amount of work has been done, but good showings have resulted from the work accomplished. The largest and best developed mine in the White Horse district is the Forest, lying a short distance from the town of Darrington. Work has been done on this property and the mine fully opened up to show its value and justify the erection of a smelter. Other properties located either adjoining the Forest or near it on Gold mountain, are the Blue Bird, the Burns, the Huron, the Swauk River and Elwell-Darrington, the claims owned by the Tacoma company and others. All of these properties indicate immense deposits of copper, which require a smelter for treatment and will not justify the shipment to outside smelters, as it would take too much of the profits in freight and cost of handling. At one time arrangements were thought to have been perfected for the erection of a five-hundred ton smelter at Darrington, but no smelter has yet been built.

Within three miles of Darrington is located a fine talc property, upon which little has been done except to strip this property ready for the erection of machinery and to test the values.

Tests show that the deposit is pure talc, and as it exists in this one place in quantity and is easily accessible, it is expected that parties interested in the manufacture of paper will secure concessions with the owners of the talc property for the manufacture of this article, erecting factories at Darrington. The White Horse district is easily accessible, the Northern Pacific Railway company having built a branch line from Arlington to tap and open up the district. The town of Darrington is small and new, but beautifully located.

At Index is another copper camp. The oldest property here is the Sunset mine, which no one questions as to its value when the mine is fully developed, but like all copper properties it requires such a great amount of capital to secure the values from the ore that the Sunset may have several years yet before it is a payer, although the company has shipped considerable ore. The ore is beautiful, both in color and in value. Other mines in the district are the Ethel, the Copper Bell, the Index-Bornite, the Bunker Hill-Sullivan and prospects named and unnamed without number. The Ethel has a concentrator for reducing the ores, and paid its first dividend some months ago. Much is expected of it, as a large amount of capital has been invested and the outlook seems to promise much.

Not far from Index is the Miller river district, which for strength and permanence of mineral-bearing ledges gives confidence in the district. These ledges are usually found in beds of narrow gorges, and the ledge matter is so heavily mineralized that it is thought will pay for concentration on the ground, with enough rich streaks to pay for shipment. The ore carries copper sulphides, gray copper, galena, gold and silver. The Co-operative Mining Syndicate has developed several properties in this district, viz: The Mono, the Acestor, the Coney and the Cleopatra. The Great Republic mines are located in Miller river valley, a concentrator installed, a saw mill built, and it is hoped that this property will become a producer soon. Other properties of note, although not properly in the Miller river district, yet located so near that they are a part of it, are the Apex and Gold mountain mines on Money creek with twelve hundred feet of tunnel and a good business outlook for the future.

The Silverton mines, still on the west of the Cascades, have the advantage of being located near to a railroad and smelter, and are so compact that a radius of seven miles will reach all the principal mines. This district has been fortunate in having men of ample capital to develop the mines. The Independent and Forty-five are established properties, having been shippers for a long time, and the Bonanza Queen is equally as well known as the two above-named, much having been accomplished on this property.

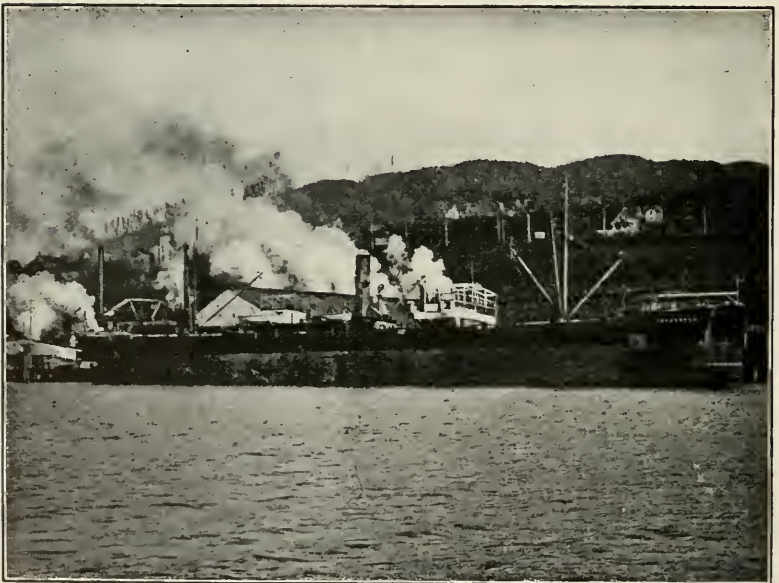
The Monte Cristo mine near Silverton has been among the most talked of mines in the state, partly because of its values, but principally because of the Rockefeller interest in the property, which gave ample capital for development and machinery. These mines and the affiliated interests represent an investment of about \$3,000,000, which John D. Rockefeller and his business associates staked on this property. As these mines were and are operated by a close corporation, little can be learned of the amount of gold secured.

In Okanogan county we have the great Palmer mountain mines, which have been advertised and talked about more than any other mines in the state, because of the great tunnel that was being run to cross-cut the veins. We do not hear very much about it just now, and never did hear much about it except the depth of the tunnel and the number of veins cross-cut. A property that is considered of value is the Six Eagles. This is owned and operated by people in Ohio, and while we do not know the amount of work accomplished nor the amount of machinery erected upon the property, we do know that the parties interested seem satisfied with what is being done, hence we judge that it is a good proposition. The claims of the Prize Mining company, located on Wanacut lake, are attracting considerable attention because of the development work being done and the rapid advancement of the property toward the producing stage. Other mines in the district are the Grand View and the Ruby mine on Mt. Chapaca, the Lake View and the Night Hawk on Mt. Ellemahen.

The Methow in Okanogan county is the center of the greatest mineral discovery made in Washington during the current year, the uncovering of unlimited quantities of first-class ore at



TACOMA SMELTER.



BELLINGHAM WATER FRONT SCENE.

Pateros, one hundred and fifty miles from Bellingham Bay and on the line of the surveyed route of the Bellingham Bay & British Columbia Railway. Tests of the mineral have been made by the best experts in the United States and in Germany and the ore pronounced magnetite of the purest kind. The average analysis of this remarkable ore is as follows :

	<i>Per cent.</i>
Metallic Iron.....	51.7
Oxygen.....	23.4
Silica.....	14.8
Sulphur.....	00.1
Phosphorus.....	None.
Telanium.....	None.

The ore is heavy, rich, and to use the expression of an old furnace man, "Looks as if it would melt like lard." An authority has said, "Judging from surface indications, the Methow country will develop into the great iron-producing center of the coast."

There are many districts so remote from railway service that it is almost impossible to know what is being done. The properties in Chelan county are all effected by lack of transportation. The Holden mine is the best known, and this because of deposits of molybdenite, a material most rare and valuable, found in but four other places in the world. The Chelan Transportation company is making efforts to build a smelter somewhere near the center of the district, as it is thought a number of low grade properties are ready to treat their ores, which it will not pay to ship to the outside. The mines in the Stehekin, Chelan county, have been prospected for years, and enough development has been done to prove the presence of ore, generally large ledges of low grade ore. No mine has yet in any sense become a producer. The ore is of two kinds, one carrying galena, gray copper and sulphides, in which silver is the principal value; the other carrying iron and copper sulphides. The sulphides are always low grade. The best known property in the Stehekin is the Minnesota mine, which has been patented and is simply waiting for the advent of a railroad to pay its owners for their investment.

The Swauk is noted as a placer mining field. In other districts while the first finds were usually placer, they soon dwarfed

in importance to the quartz finds, but on the Swauk placer and hydraulic mining still controls.

The distance of Washington mines from smelting centers is a serious drawback to the business. The large number of properties having base or low grade ores makes smelters a necessity. Several smelters in British Columbia treat Washington ores. Also there are smelters at Northport to treat the ores from the mines in the eastern part of the state, and at Everett and Tacoma to treat the ores from mines in Western Washington. But more smelters are needed. There should be smelters at Darrington, at Index, at some point in the Lake Chelan country and in several other places. Time will accomplish this. Throughout the entire mineral belt, in not only the Cascades, but the entire gold range, innumerable streams furnish abundant power to operate machinery and reduction plants. The presence of water power could be truthfully described as belonging to almost every property named in this article. This furnishes data of the advantages of the field in natural power.

The mountains are covered with a thick growth of timber furnishing in most instances all the timber necessary for the mines. In the higher altitudes the growth is smaller but is still large enough for all timbers and buildings.

The ore bodies in Washington mines are of immense size and, in the majority of cases, of bare or low grade; hence it requires large amounts of capital for the development of mines and the installation of machinery. The locators of these mines rarely have this capital, and many good properties are greatly delayed because of the difficulty in interesting capital. There are mines galore located the length and breadth of the state; mines of copper, mines of gold, mines of silver, mines of lead, mines of iron, mines of clay, mines of talc, mines of asbestos, mines of molybdenite, mines, mines, mines, but money is needed for their development. When this money comes, either from eastern states or from the product of Washington mines themselves, then people here and abroad will realize that Washington is one of the greatest states, if not the greatest state, in mineral resources of any state in the Union.

EDUCATION.

There are few American homeseekers who neglect to satisfy themselves that their proposed new home has good educational facilities. Soil, climate, commerce, railroads—these are important, but the opportunity for education in this day and age of the world is vital. Not many of the thousands in the older states who are looking westward for new homes will come to Washington unless they can be satisfied on the important point of its educational advantages. Since that is the case we are glad to be able to say to the homeseeker that he will find the State of Washington to be in the front rank of American states in the provision which it makes for schools. This, of course, is not to say that our schools are yet equal in *all* respects to those of the older states, because time is essential to some features of school work, but we do say that we have all the foundations for a system of education equal to the best; in fact, it is shown by the last United States census that the West far outranks the East in average freedom from illiteracy. Nebraska and Iowa in the older West, and Oregon and Washington in the new Pacific West, are just about even in the race, and stand at the head of the column of American states in the standard of literacy. In these states there are but two or three per cent of illiterates, while most of the Eastern states have from five to eight per cent. This condition is due in part to the fact that the settlers of the West have almost invariably possessed the essentials of education before arriving in the country, and in large part to the fact that it has been the pride of the West to maintain good schools from the backwoods period down to the present day.

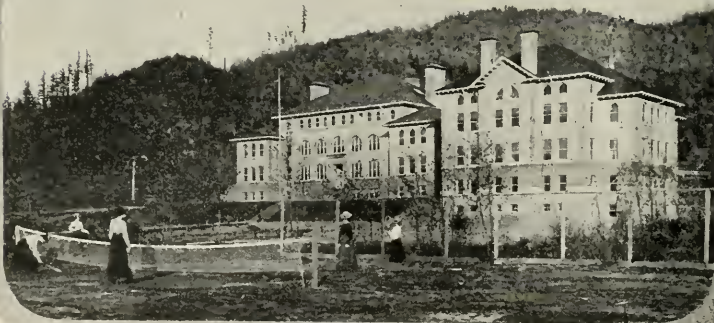
That we may present the clearest and most succinct picture of our schools to the readers of this publication, we shall describe first, the common and high schools of the state; second, the institutions of higher learning maintained by the state, and third, the institutions under private management.

COMMON AND HIGH SCHOOLS.

When Washington was made a state by Act of Congress ample provision was made for common schools. Sections number sixteen and thirty-six in each township were set aside for school purposes. The proceeds of the sale of this land constitute an irreducible fund, the income only of which may be used. In addition to the income from this fund, there is a state school tax and a district school tax. The value of all school property, not counting the school lands, for the year ending June 30, 1903, was \$7,700,060, and the amount expended by all the schools of the state for teacher's salaries, buildings and running expenses for the same year was \$3,658,117. The total number of school districts in the state is 2,407, in 285 of which schools of more than one department are maintained. The total number of children of school age in the state is 183,432, and of these there were enrolled and in attendance at the schools 149,750. All these figures are compiled from the reports of the county superintendents for the year ending June 30, 1903. The attendance for 1900 was 115,104. By reference to the above figures for attendance this year it will be seen that there has been a gain in the three years of 34,646 in actual attendance. In 1900 there were 139,097 children of school age, which compared with the number reported for 1903, shows a gain of 44,335 for the past three years. These figures give some idea of the rapid growth of population in the state.

One of the best evidences of a wholesome condition of the schools is the length of the school session. In the towns Washington had but four districts, reporting as small a session as six months for the year 1902. All the others reported sessions between eight and ten months long. In the country districts the session of course does not last so long, but the average for the whole state in the country districts is over six months.

State Superintendent R. B. Bryan reports for 1902 a total of 4,159 teachers, whose average salaries were, for male teachers \$55.42 per month, for female teachers \$44.98 per month. In addition to good salaries every possible inducement is held out to teachers to grow in efficiency. Courses of study are prescribed, examinations in which passed successfully entitle the teacher to a life certificate, giving relief from the grind of per-



NORMAL SCHOOL BUILDINGS.
Ellensburg. Cheney. Whatcom.

iodical examinations. Examinations for certificates are conducted under direction of the State Board of Education, which body examines and grades all papers. Uniformity of requirement and a high grade of attainment are thus secured. Into the schools of a number of the cities free kindergartens are being introduced.

One of the significant facts about common schools is the number of libraries and unabridged dictionaries. We find 821 schools with libraries, and 1,616 with unabridged dictionaries. The total value of the district school libraries is given at \$150,226.

As to the high schools, we may say that nearly every town in the state of from 1,500 people upward has a high school with a three or four-year course. In a number of instances also several country districts have combined to form a Union High School district. From among the high schools of the state twenty-one have been accredited by the State University and Agricultural College. It may be of interest to the reader to see this list, as it will give him a clear view of the distribution of the high schools of the state. It is as follows: Aberdeen, Ballard, Davenport, Dayton, Centralia, Chehalis, Everett, Fairhaven, Yakima, Port Townsend, Puyallup, Seattle, Spokane, Tacoma, Vancouver, Walla Walla, Waterville, Whatcom, Kent and Olympia. The total number of students in attendance at high schools during the year 1902 was 5,633. Several of the cities of the state have constructed magnificent buildings for the housing of their high schools, such as would do credit to any city in the United States. Among those of conspicuous beauty and excellence are the buildings at Seattle, Spokane, Whatcom and Walla Walla. Every year is seeing the addition of new apparatus, libraries and other instrumentalities in both the common and high schools, to such an extent that it is only a question of a little time when we shall be able to compare our facilities in the two great lower strata of the educational structure with those of Massachusetts, Michigan or Illinois.

STATE INSTITUTIONS OF HIGHER LEARNING.

We turn now to the schools of higher learning, which in the nature of the case are attended by smaller numbers, and yet which occupy such places in the general scheme of schools as

to enlist continually greater interest in the mind of the general public. The advisability of such institutions maintained at the expense of the state has long been placed beyond discussion in the West. It is felt that though no large proportion of high school graduates may go through a university or normal course, the very existence of such institutions is a stimulus to those attending the lower schools such as nothing else can supply. The Universities of Michigan, Wisconsin, Nebraska and California show what may be attained in the matter of state institutions of higher learning. At all events, the state universities, agricultural colleges and normal schools are in the West to stay. They represent the democratic and social idea in education.

Washington has taken its place in the matter of establishing and maintaining generously such institutions. Back in territorial days the university was founded, and through those years of scanty population, meager opportunity and inadequate appropriation it was steadily supported for the days of larger things which we now see dawning.

Three normal schools are maintained by the state, and also an Agricultural College and School of Science and a State University.

The Normal School at Cheney.

The Cheney Normal was founded in 1890. In 1895 the Legislature appropriated \$60,000 for the present splendid brick and stone building which meets all requirements. The value of buildings and grounds is about \$110,000, while library and laboratory have an estimated value of \$9,500. One hundred and ninety-eight students were enrolled during the last year, with eighty-one training school pupils. Prof. Lewis B. Alger, an alumnus of Michigan University, has been principal of the institution for the past few years.

The Ellensburg Normal.

The Ellensburg Normal was established by the same Legislature which established Cheney, 1890, but it was not formally opened until the autumn of 1891. In 1895 the present commodious building was erected on a picturesque site. The faculty consists of eleven members, with Prof. W. E. Wilson at the head. A library of four thousand volumes and apparatus for

the biological department add to the efficiency of the institution. For the past year there were 143 students enrolled, while in the training department there were 175 pupils of all grades from kindergarten to high school.

The Whatcom Normal School.

The Whatcom Normal School is the youngest and largest of the three Normal schools, but this is not surprising since it is the only one on the west side of the mountains, while Eastern Washington with less population has two. Whatcom, located on Bellingham Bay, with an exceptionally genial climate and surrounded by a rich and fertile region, has marked advantages as the home of such an institution. The State has made generous provision for the school, and its building is one of the best for school purposes in the State, being well equipped with laboratories and all necessary apparatus. The library contains forty-eight hundred volumes, but the funds available will add to this fifteen hundred new volumes annually for some time to come. There is excellent provision for a modelling and art department, and a large number of pupils of the grammar grades of the city schools are assigned to the training department. Of these there were 194 during the past year. In the graduate department there were 335 students enrolled. The faculty consists of twenty members, Prof. E. T. Mathes, being the principal.

The course of study is essentially the same in all three of the Normal Schools. The regular course at Whatcom requires five years. Graduates of this course are entitled to state diplomas as teachers for five years, at the expiration of which time the holder is entitled to a life diploma; provided, he has been engaged in teaching for at least two years of the five. Provision is made for graduate work in the philosophy of teaching. The courses at Ellensburg and Cheney do not require quite so much time for graduation.

The last Legislature made quite generous provision for the Normal Schools, appropriating in all \$127,500 for their maintenance for two years. The outlay is abundantly justified by the quickening of interest in all departments of school work, and the larger efficiency of teachers. The exceptionally high stand-

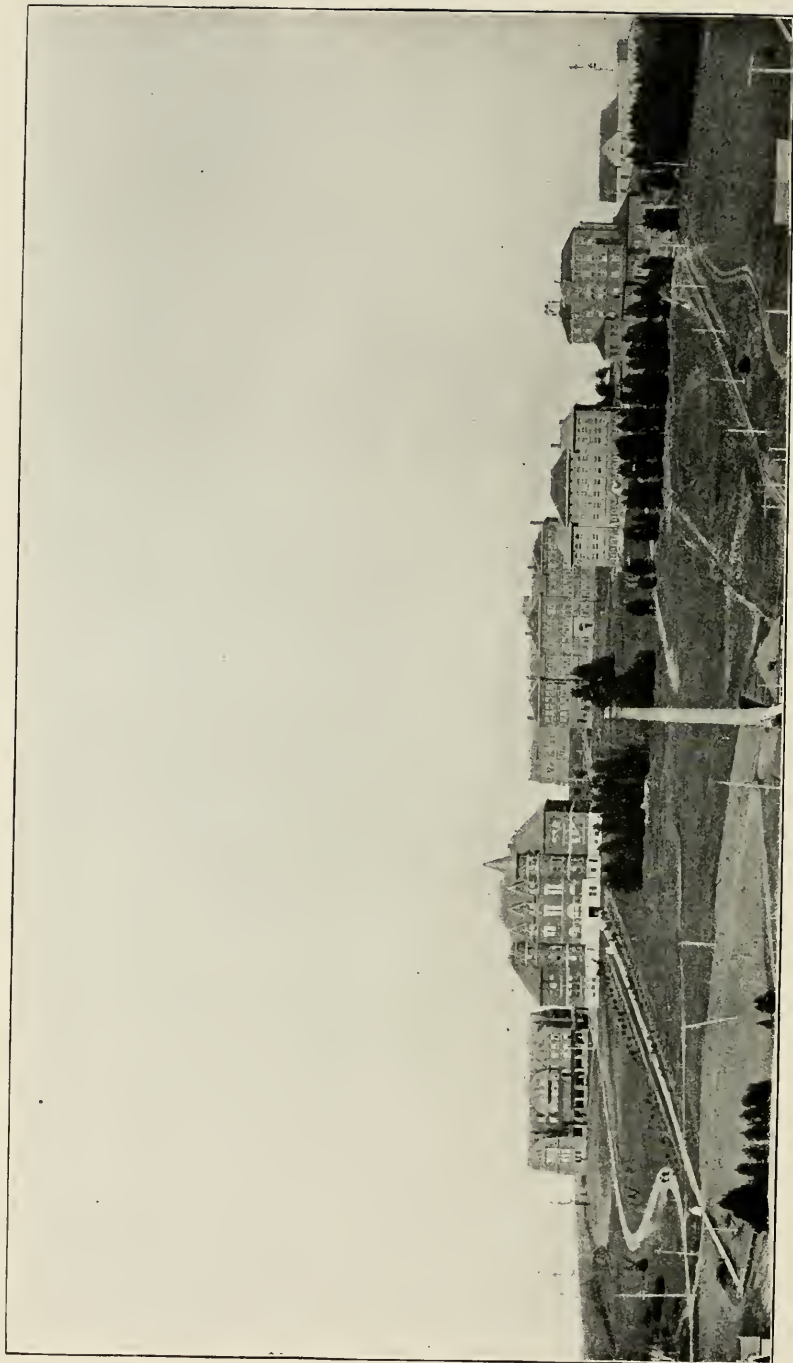
ing of our teachers may be attributed in considerable degree to the results attained by the Normal schools.

Agricultural College and School of Science.

This institution is located at Pullman in Whitman county, near the extreme border of the state. This is in the heart of the Palouse country, rich in varied agricultural resources. The Agricultural College was established by the Legislature of 1890, but two years passed before it was ready to receive students. The theory of the institution is quite broad, being "to promote the liberal, practical education of the industrial classes in the several pursuits and professions of life."

The term "industrial class" is interpreted to mean all persons engaged in agricultural, mechanical, or other industrial occupation as contrasted with leisure classes. (It may be remarked in passing that this includes pretty much everybody, for the leisure classes are few and far between in Washington State.)

The Agricultural College has had a bountiful support and has made great strides in numbers and resources. The Enabling act of the state provides for the bestowal upon it of 190,000 acres of land, the value of which extends into the millions. Two United States funds go to this institution, annually the Morrill fund of \$25,000 donation, and the Hatch fund of \$15,000. The state also has made large appropriations, those of the last session being \$48,000 for improvements and \$11,000 for maintenance for the two years. The college is now provided with a farm and campus of 250 acres, on which crops of all kinds suitable to the climate are produced. There are the following buildings: Administration, Science Hall, two dormitories, Ferry Hall for boy's, Stevens Hall for the girls, a Mechanical and Engineering Building, a Mining Building, Chemistry Building, known as Morrill Hall, and still another used as an armory and gymnasium. These are commodious buildings, well adapted to their various purposes. Beside these, there is a Green House, Veterinary Hospital, Creamery and a number of farm buildings. There is a three-year preparatory course and a four-year college course. The latter provides the following departments of instruction: Mathematics, Civil Engineering, Chemistry, Botany and Zoology, Agriculture, Horticulture, English Language and Literature, Economic Science and History, Mechanical Engin-



AGRICULTURAL COLLEGE AND SCHOOL OF SCIENCE.
Pullman, Wash.

eering, Modern Languages, Mining Engineering and Military Science and Tactics.

Special courses are also offered in Physics, Geology and Mineralogy, Latin and Science of Education. There are in addition schools providing for special instruction in the following lines: Agriculture, Dairying, Pharmacy, Veterinary Science, Business, Artisans and preparatory schools. As might be expected from the general plan of this institution, the stress of its work is in science, and for this purpose it has an excellent equipment.

The president of the institution is E. A. Bryan. The faculty consists of forty-nine professors and instructors. The number of students enrolled for the year 1902-3 was 568. Tuition is free to residents of this state.

University of Washington.

At the head of the public educational institutions of the state stands the State University. This is located at Seattle on a magnificent site between Lake Washington and Lake Union. Three hundred and fifty-five acres of land are included in its campus. Around it some of the sublimest natural scenery lies outstretched in all directions. Few universities have locations at all comparable to this. It can not fail to produce its inspiration in the minds of students, and results may yet be seen in the fostering of native art and literature.

The University of Washington was founded during the very year of the great Indian wars, 1855. No work was done, however, until 1862; in fact, no building was in existence until 1861. That venerable structure is still standing in the midst of the surging activity of the "Queen City." During the territorial regime the university was chronically impecunious. For though the legislatures were proud of having a university, they seemed to have the impression that it could live without nourishment. In 1893 a new order of things arose and generous provision was made for the grounds and buildings. The present site was secured and a new era in the life of the institution was ushered in. There is a magnificent administration building, fine dormitories for young men and young women, a Science Hall, an Astronomical Observatory, a good gymnasium, and provision for the Engineering and Mining Departments. Grounds and buildings are

worth \$1,000,000. The institution consists of the College of Liberal Arts, a Preparatory Department and professional courses in Engineering, Mining, Pharmacy, Law and Graduate Study. There is a library of over 15,000 volumes. The faculty consists of forty-two professors, instructors and lecturers. Dr. Thomas F. Kane is the president. The number of students during the last school year was 631. The government of the university is vested in a Board of Regents of seven members, appointed by the Governor for six years. The maintenance of the university is derived from the lands of 90,000 acres granted by the Federal Government and from appropriations by the State Legislature. Tuition is free to residents of the state.

The university has a number of conspicuous advantages in location. It is near a city which is destined to become one of the great cities of the world, yet far enough away to be out of the dust and turmoil of business. Its campus is touched by two beautiful lakes, which afford excellent rowing, and sailing courses, and there are all the natural conditions to encourage every species of gymnastic exercise. In addition to these physical advantages the moral and intellectual atmosphere is stimulating. In 1895 the legislature passed a law forbidding the sale of intoxicating liquors within a radius of one and one-half miles of the university grounds. This has been rigidly enforced, and has been in a high degree efficacious in attracting a desirable class of people to the community. It will be strange indeed if our university, with all its advantages, does not exercise a potent influence for good upon our growing state.

EDUCATIONAL INSTITUTIONS UNDER PRIVATE CONTROL.

The preceding pages have presented a view of the public school system of the State of Washington. In the nature of things the bulk of pupils will be found in institutions maintained at state charge. It must not be supposed, however, that our state is lacking in the element of private schools. The general enterprise and activity of mind which have been indicated in the establishment of the common school system has found expression also in a large number of academies and colleges under various forms of trusteeship. The majority of these are under some kind of denominational control. There is a consid-

erable number of business colleges. Kindergartens under the individual management of trained instructors are found in most cities in this state. The report of the State Superintendent for 1902 contains the names of thirty-four private academies and colleges, coupled with the remark that there are as many more which have failed to report. Eleven of the thirty-four reporting are under no religious control, while twenty-three are assigned to some religious body. Of these, thirteen are Roman Catholic, two are Congregational, two are Baptist, one Lutheran, one Presbyterian, one United Brethren, one Episcopal, one Methodist and one Adventist.

Whitman College.

The oldest, largest and best known of the private colleges of the state is Whitman College of Walla Walla. This institution has had a unique history and many elements of romance and heroism have gathered around it. Whitman College was founded by Rev. Cushing Eells, in memory of Dr. Marcus Whitman, the pioneer missionary who crossed the plains and settled in Eastern Washington near Walla Walla in 1836, and was murdered at his mission by the Cayuse Indians in 1847. The charter of "Whitman Seminary" was granted by the Territorial Legislature in 1859, but it was not until 1866 that any work was done. Fragmentary and irregular academic work was done under many discouragements until 1883 when a new charter was granted by the legislature creating "Whitman College." Dr. A. J. Anderson, of Seattle, was first president. Since that time a regular college course has been maintained and the institution has progressed with gratifying rapidity. Its era of most phenomenal development has been since 1893 when Dr. D. K. Pearsons, of Chicago, made an offer of \$50,000 for endowment on condition that \$150,000 additional should be raised. This offer was met and subsequent campaigns for endowment and building funds have resulted in putting the college on a firm financial footing. At present the college owns a slightly campus of twenty-three and one-half acres within the city limits of Walla Walla, and is housed in three fine stone and brick buildings—Whitman Memorial Building, Billings Hall for young men and Reynolds Hall for young ladies. In addition to these structures there are three wooden buildings, one used by the Conservatory

of Music, one by the Y. M. C. A. and Y. W. C. A. of the college, and the other as an additional dormitory. There are also three dwelling-houses upon the campus. The Whitman College campus shares the freshness and beauty of the surrounding country and presents a most attractive appearance to a stranger.

Whitman College maintains three general departments, the college with its Classical, Scientific and Literary courses, equivalent in literary standards with the best eastern institutions; the Preparatory Department, with a four-year course, and the Conservatory of Music. The faculty of the college consists of seventeen professors and instructors. Rev. S. B. L. Penrose is president. During the year 1902-3 there was an enrollment of 320. Whitman has been conspicuous among the colleges of the West for its thoroughness of instruction, its high standard of requirements and the advanced grade of its courses. The college has a library of 10,500 bound volumes.

Whitworth College.

Whitworth College, of Tacoma, may next be mentioned as an institution of great promise. It is under the control of the Presbyterian denomination of Washington. It was first established in 1883 as Sumner Academy. In 1890 it was reincorporated as Whitworth College, named in honor of a leading pioneer Presbyterian minister. In 1899 its location was changed to Tacoma and secured its present site and entered upon collegiate work under the presidency of Prof. F. B. Gault, a prominent educator in the northwest. The present administration building is the old Allen C. Mason residence, which, together with the former owner's excellent library of 6,000 volumes (now increased to 8,000), was purchased at a very advantageous figure. At the present time the college possesses three buildings in addition to the Mason residence: The Lodge, used as men's dormitory, Mason Library, used as library and recitation building, and Olmstead Hall, dormitory for girls. These buildings possess every feature of convenience and attractiveness. The college has also a well conducted musical department, which has done much toward developing and maintaining a standard of artistic taste in the city.

Whitworth is to be congratulated on its location and its constituency. Both College and Preparatory Departments are

maintained each with two courses, the Classical and the Scientific. The number of professors and instructors is fourteen, and the enrollment of students for the year 1902-3 was 126 in the Literary Department, and 59 in the Conservatory of Music. Special stress is laid by the faculty and trustees upon the "home" nature of the college.

Gonzaga College.

The leading Roman Catholic institution, Gonzaga College, is worthy of special notice. The Catholic denomination was peculiarly fortunate in the site, since they secured a section of land in the eastern part of Spokane in early times, which by the rapid growth of the city has become very valuable. The college has accordingly acquired resources unusual for private schools in a new land. They have been able to erect two magnificent buildings. One of these has a floor extent of 189x95 feet, while the new building now in process of completion has a frontage of 255 feet and a depth of 120. Both buildings are fitted with every convenience and comfort known to modern architecture. The course of studies pursued offers every facility for classical and commercial education. It includes four departments: The College, which furnishes the usual four year course of studies leading to the degree of Bachelor of Arts, the Academic or High School Department, the Commercial Department and the Preparatory Department. The French, German and Spanish languages are taught. The force of officers and faculty consists of thirty-three members. The students are boys and young men only. The total enrollment for the year just ended was 291.

Among the other institutions under private control we may more briefly mention :

Puget Sound University, of Tacoma, which is under Methodist direction. During the coming year it is expected that new buildings will be erected upon the site owned by this institution in the southern part of Tacoma, and there without doubt will arise a most creditable institution.

Vashon College, on Vashon island, under the control of Pres. B. F. Jones, is a boarding-school for boys and girls of academic grade.

Colfax College, in the town of that name in Whitman county, is under Baptist control.

At Walla Walla *St. Paul's School* for girls is under the auspices of the Episcopal Church.

Annie Wright Seminary, at Tacoma, under the control of the Episcopal Church, is one of the best equipped and best conducted schools for girls in the West.

Washington Academy, at Huntsville, *Waitsburg Academy*, at Waitsburg, *Woodcock Academy*, at Ahtanum, *Puget Sound Academy*, at Snohomish, may be mentioned as institutions of academic grade doing excellent work.

In concluding our survey of the private schools we may say that the total enrollment of the thirty-four schools reporting to the Superintendent of Public Instruction for 1902 was 4,804. If we allow 4,500 for the thirty-four private academies which failed to report, we have a total of 9,304. If to this number attending the private schools we add the number of those attending the state institutions of higher learning, about 2,000, we shall have a total of about 11,304. This is an encouraging tribute paid by the people of Washington to their institutions of higher learning.

CONCLUSION.

It is interesting to note that of the children of school age in the State of Washington fully 90 per cent are in actual attendance, either in the public or private schools of the state. This is a matter of great satisfaction to our people, from the fact that at present we have no compulsory attendance law, the same having been declared unconstitutional on account of defective title. This may be attributed in considerable measure to the strict enforcement of the laws against child labor. Already in the front rank in the matter of the general intelligence of its people, and with its well organized and efficient common school system, its excellent public and private institutions of higher learning, and its phenomenally high per cent of school children actually in attendance upon its schools, the State of Washington may well be proud of what it has, thus early in its history, achieved for the cause of education.

We append tables, compiled from records in office of State Superintendent of Public Instruction and reports of all the county school superintendents in the state, giving school census, valuation of property and other items of interest in the educational life of the state.

EDUCATIONAL STATISTICS.

Table No. 1.

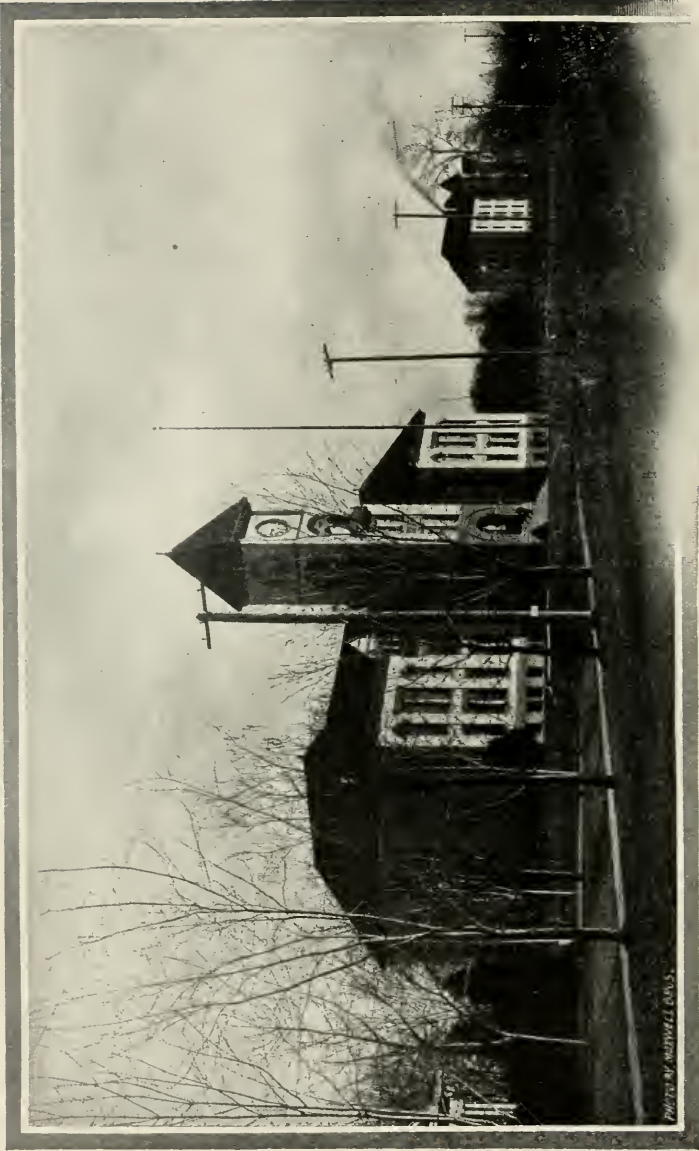
COUNTIES.	<i>Number of Census Children in State June 1, 1900 and June 1, 1903. Per Cent. Increase.</i>			<i>Number of Pupils in Attendance at Common Schools for Years 1900 and 1903.</i>	
	1900	1903.	Per Ct. Inc.	1900.	1903.
Adams	1,532	2,756	80	1,084	2,222
Asotin	1,286	1,667	30	1,045	1,433
Chehalis	4,091	4,915	20	3,285	4,010
Chelan	1,110	2,130	92	835	1,783
Clallam	1,533	1,478	* 2	1,295	1,268
Clarke	4,549	4,819	6	3,769	4,261
Columbia	2,372	2,187	* 7	1,964	2,085
Cowlitz	2,602	2,796	7	2,321	2,404
Douglas	1,558	3,053	95	1,382	2,452
Ferry	728	689	* 5	307	476
Franklin	87	648	644	86	495
Garfield	1,354	1,413	4	1,249	1,209
Island	510	716	40	433	598
Jefferson	1,305	1,274	* 2	1,057	1,030
King	22,824	33,380	46	18,131	25,906
Kitsap	1,859	2,702	45	1,522	2,202
Kittitas	2,841	3,120	9.8	2,760	2,975
Klickitat	2,121	2,511	18	1,859	2,140
Lewis	5,238	6,179	17.8	4,505	5,336
Lincoln	4,063	5,449	34	3,673	4,923
Mason	1,006	1,067	6	817	872
Okanogan	811	1,412	74	576	1,190
Pacific	1,744	1,886	8	1,490	1,586
Pierce	14,668	19,426	32.4	11,428	13,577
San Juan	884	970	9.7	754	885
Skagit	3,874	5,186	33.7	3,382	4,436
Skamania	457	426	* 6	381	368
Snohomish	6,362	10,245	61	5,080	7,906
Spokane	14,178	18,023	27	11,996	15,939
Stevens	3,088	4,483	45	2,644	3,743
Thurston	3,219	3,650	13	2,544	2,876
Wahkiakum	852	819	* 3	663	624
Walla Walla	4,767	5,113	7	4,102	4,113
Whatcom	6,670	9,835	47.4	5,840	8,201
Whitman	9,207	10,343	12.3	7,906	8,895
Yakima	3,745	6,666	78	2,937	5,331
Totals	139,097	183,432		115,104	149,750

*Decrease.

EDUCATIONAL STATISTICS.

Table No. 2.

COUNTIES.	<i>Number of School Dis- tricts in County.</i>	<i>Cities and Townships Having Graded Schools.</i>	<i>Expenses for Year 1903 of all Kinds.</i>	<i>Valuation of School Property.</i>
Adams.....	75	3	\$42,400	\$86,695
Asotin.....	29	2	18,384	37,443
Chehalis.....	70	8	94,679	133,745
Chelan.....	40	6	33,135	43,371
Clallam.....	48	1	28,037	60,198
Clarke.....	78	9	48,391	86,349
Columbia.....	53	3	80,277	105,136
Cowlitz.....	66	5	33,194	58,312
Douglas.....	96	5	39,078	58,467
Ferry.....	13	1	8,840	19,744
Franklin.....	21	2	15,487	17,849
Garfield.....	43	2	22,604	49,413
Island.....	18	2	11,444	17,845
Jefferson.....	22	5	29,272	173,045
King.....	146	33	971,492	1,942,745
Kitsap.....	49	5	37,302	45,165
Kititas.....	43	4	37,637	100,665
Klickitat.....	75	5	22,257	33,229
Lewis.....	111	11	73,569	126,171
Lincoln.....	129	11	85,106	154,244
Mason.....	42	1	18,918	26,324
Okanogan.....	48	2	17,992	30,145
Pacific.....	54	7	37,196	60,749
Pierce.....	100	19	393,966	1,147,311
San Juan.....	27	2	15,621	21,280
Skagit.....	75	15	85,539	187,373
Skamania.....	18	.....	3,439	4,886
Snohomish.....	87	16	180,234	372,816
Spokane.....	153	18	510,440	1,166,562
Stevens.....	107	6	55,312	71,605
Thurston.....	67	5	75,019	136,175
Wahkiakum.....	22	2	10,359	16,883
Walla Walla.....	70	8	98,284	310,442
Whatcom.....	79	17	158,284	305,366
Whitman.....	164	22	167,350	334,954
Yakima.....	69	22	107,673	157,352
Totals.....	2,307	285	\$3,658,117	\$7,700,060



WHITMAN COLLEGE, WALLA WALLA, WASH.

PHOTO BY BRIDGEMAN & CO.

STATE CHARITABLE, REFORMATORY AND PENAL INSTITUTIONS.

The State of Washington makes provision for the blind, deaf and feeble minded, has a reform school for juvenile offenders, a penitentiary conducted on the punitive and reformatory system, a soldier's home and two hospitals for the insane, which are conducted strictly on humanitarian principles.

THE STATE SCHOOL FOR DEFECTIVE YOUTH.

This institution is located at Vancouver, Washington, and is a school of great importance. It is properly divided into three branches, viz: for the deaf, the blind and the feeble minded. The condition of the deaf, who lived prior to the establishment of such schools without mental development, was most pitiable; but as a result of just such schools as we have in our own state, the condition of this class has been greatly ameliorated, and among their number we find many competent business men and women, and those trained for the various vocations of life. Also in the case of the unfortunate blind, we find that their misfortune bears less heavily upon them when they have had the benefit of such a school with its scientific training. For the feeble minded there is not so much promise, and their treatment partakes of a physical rather than an intellectual nature. However, such improvement as they are able to attain by careful training proves beneficial, and we can say for the institution which is under the management of Prof. James Watson, the director, that each branch has been well managed, and it is an institution of great value to the state.

THE STATE REFORM SCHOOL.

The State Reform School is located at Chehalis, and is under the able superintendence of Charles S. Reed. The most efficient discipline is maintained, and the moral strength of its atmosphere is vigilantly guarded. Besides the superintendent, there are two lady teachers in each department, making a teach-

ing force of six. Public school text books are used, and the course of studies adopted by the State Board of Education followed as far as possible.

In connection with the institution is a farm, upon which the boys find employment, and in addition to this there are shops of various kinds. The shoemakers, besides making and mending shoes for all the boys and girls, have made shoes and slippers for both of the insane hospitals and the Soldier's Home. The boys in the tailor shop make the clothes for the boys of the institution, and the carpentry and painting forces keep up the necessary repairs and make all necessary improvements. The military organization of the school is maintained and officered from the ranks of the inmates. Every possible chance is given for outdoor exercise. Three evenings each week are given over to entertainments in the assembly hall, and religious services are conducted by local and visiting clergymen.

The girl's department has a sewing-room, where much fancy needlework is done. They do cooking, washing and housework for themselves and are taught typewriting. An institution conducted as this one is must prove a great benefit, and many boys and girls have gone forth from it reformed and ready to enter upon the honest pursuits of life.

STATE PENITENTIARY.

The State Penitentiary is located at Walla Walla. In this institution there is a jute mill and brick yard, which gives employment to a large number of the inmates. Others are employed in taking care of the institution in the various departments and in caring for the grounds, which are always kept in excellent shape, and in operating the farm that is maintained in connection therewith. There is a good prison library and the prisoners are encouraged in the use of it. Superintendent F. A. Dryden maintains a firm and even handed discipline, and sees that the health of the prisoners and the sanitary condition of the prison are looked after. There is a parole system in effect, under the laws of the state, which since its passage has given most excellent satisfaction. As a rule, those who have been paroled have scrupulously lived up to the requirements of the law, and nearly all of them have been steadily employed during their period of parole.

SOLDIER'S HOME.

The Soldier's Home is located at Orting in Pierce county. The situation of the home is healthful, and it is provided with modern and well ventilated buildings. In connection with the home there is a farm, supplied with all kinds of live stock and poultry for the use of the inmates. This affords light and easy employment to those who are able and wish to employ a part of their time. They have a library, a hospital, an audience hall, billiard parlors and amusement room, and other conveniences for the use of the inmates of the institution. The superintendent of the home is J. H. Coffman. There are 254 old soldiers who find a home in the institution.

HOSPITALS FOR THE INSANE.

There are two public hospitals for the insane of the State—the Western Washington Hospital, which is located near Steilacoom, in Pierce county, and the Eastern Washington Hospital, which is located at Medical Lake, Spokane county.

At each of these places large and commodious buildings have been erected. These hospitals are conducted on strictly humanitarian principles. Library and museum facilities are afforded the inmates, and light labor, when deemed expedient by the superintendent, is provided. Every known method of treatment is resorted to to restore these unfortunates, where possible, to their right minds. C. M. Parks, M. D., is superintendent of the Western Washington Hospital, and W. J. Howells, M. D., is superintendent of the Eastern Washington Hospital.

THE STATE BOARD OF CONTROL.

Our state institutions are all under the general supervision and management of a board, appointed by the governor, known as the State Board of Control. The board, as now composed, consists of Grant Neal, Chairman, Jesse Mills and H. T. Jones, all of whom now reside at the state capital, that being the headquarters of the board.

MISCELLANEOUS INDUSTRIES AND ENTERPRISES.

FLOURING MILLS.

Following the advent of this government in its occupation of the Hawaiian and Philippine islands of the Pacific, and the increase of trade incident thereto, one of the growing and most important exports of this country is flour. As elsewhere stated in this volume, it is well established that for the acreage available for wheat raising there is no place in the world that excels the State of Washington. As we set forth in our article on dairying, there is an ever increasing demand for feed stuffs throughout every part of the state, thus providing a home market at all times for the bran, shorts and other by-products of the flour mills. When all these things are taken into consideration it will be seen that the manufacture of flour is a very important industry, and while the people generally know little of what is being done in this state, the value of the output foots up a magnificent sum. From the most reliable sources obtainable, this bureau can state that there are about sixty-five flour mills of all descriptions operating in the state at the present time. The following statement with reference to these mills will no doubt be of interest to our readers :

The aggregate value of these mills is.....	\$ 1,830,387
Number of bushels of wheat ground in 1902.....	9,870,975
Number barrels of flour produced.....	2,193,550
Number tons of bran and feed.....	189,078
Value of flour at \$3.60 per barrel.....	7,896,780
Value of bran and feed stuff at \$18 per ton.....	3,403,404
Total value of output.....	\$11,300,154

The various mills of the state are constantly increasing their capacity, and it is with difficulty that the bureau secures any definite information with reference to the same, however, the industry is bound to grow to immense proportions as the demand for flour and bread stuffs is increasing in China, Japan, Australia and our island possessions. As an evidence of this it is only necessary to refer to the U. S. Customs statistics for the



BUILDING FOR DEAF AND BLIND.



SCHOOL FOR DEFECTIVE YOUTH.
Building for Feeble Minded, Vancouver, Wash.

Puget Sound district. There was exported from this district for the fiscal year ending June 30, 1903, 1,986,286 barrels of flour, the value of which, according to the same authority, amounted to \$6,237,382. Of course we do not necessarily claim that every barrel of this flour was produced in the State of Washington, as it is possible that some might have come through from our sister states to the east, but by far the greater portion of it was produced here.

It may also be of interest to our readers to note that the exports of flour from Puget Sound ports are continually on the increase and now exceed those of any other port on the Pacific Coast, having shipped for the first seven months of 1903 66.9 per cent of the flour, or more than San Francisco and Portland combined.

EVERETT PULP AND PAPER MILL.

The Everett Pulp & Paper Company operates the largest paper mill in the State of Washington. This mill was established in 1892, and has been operating continuously since that date. Wood pulp exclusively is used, from which is manufactured all kinds of wrapping paper, a first-class quality of book and tone paper, and a very good grade of writing paper. No newspaper paper is yet manufactured at this mill. As a sample of their work the reader may be interested to know that the paper used in this book is manufactured at this mill. To show the value of this plant to the state and to the community where it is located, we would say that they use annually for paper about 12,000 cords of wood; for making steam at the mill 35,000 cords of wood; the annual output of the mill is 5,500 tons of paper, valued at about \$450,000; about 250 people are employed and receive wages amounting annually to about \$225,000. The plant has a ready market, disposing of a large amount of its product locally, and it also exports large amounts of paper to the Hawaiian Islands, China and Japan and other Oriental countries. A paper mill is also located at LaCamas, Clarke county. The principal product is plain print or newspaper.

SHIP BUILDING.

Elsewhere in this book we have made the prediction that this state would one day be the greatest ship building center in the world, and even at the present day it is one of the most impor-

tant industries common to our state. Ship building is carried on at Gray's Harbor and at different localities on Puget Sound. Among the various yards are those at Aberdeen, Port Blakeley, Eagle Harbor, Ballard, Everett, Whatcom, Tacoma and Seattle, where vessels can always be seen on the ways in various stages of construction. Here are built and launched every description of water craft, from tugs and launches to large five-masted schooners and elegant steamships. This industry can not help growing in importance as the superiority of our timber for this purpose is recognized the world over. A test of the comparative strength of eastern pine, eastern oak and Washington fir, shows that the pine will break at a pressure of 1,610 pounds, eastern oak at a pressure of 2,470 pounds, and Washington fir at a pressure of 4,321 pounds. The enormous advantage of this wood for heavy service may be judged accordingly.

SEWER PIPE AND FIRE BRICK.

Sewer pipe of good quality is manufactured in different parts of the state. A large plant is located at South Seattle, owned by the Denny Clay Company, where sewer pipe of all sizes and dimensions is manufactured, also white pressed brick for building purposes, and vitrified or hard brick for street paving. There is also a plant at Little Falls, Lewis county, and another at Clayton, on the Spokane Falls & Northern Railway, where a plant has been operated for the past ten years, manufacturing all manner of earthenware. Fine bodies of fire clay are said to exist in Kitsap county, as yet undeveloped, and it is likewise reported that similar bodies have been found elsewhere in the state.

STONE.

The tastes of the most æsthetic builder can be satisfied within the borders of the State of Washington when it comes to the question of building stone. He can erect his buildings from the finest of gray sandstone, obtained from the Chuckanut quarries, in Whatcom county, as well as other parts of the state. If not satisfied with sandstone, he can obtain the finest quality of granite, to be had at numerous places in the Cascade mountains, and if still not satisfied, he can have beautiful marble, white, clouded or black, and his walls, staircases and mantels

can be adorned with the finest onyx. The largest and best developed bodies of marble thus far are in Stevens county, but it is known to exist in many different portions of the state, and with the increased demand many valuable quarries will doubtless be opened.

LIME.

Lime rock is found in unlimited quantities at different places throughout the state, and the business of manufacturing lime is an important industry. The largest establishment of this kind is located at Roche Harbor, on one of the San Juan islands. The plant at this place has a capacity of 1,500 barrels of lime per day, and in connection with the same is operated a barrel factory, and surrounding it is an important village, the outgrowth of these works. The local markets of the state and the Sound consume a large amount of the lime manufactured here, but in addition to this it is exported to all points of the Pacific Coast. As an evidence of the prosperity of this industry it is only necessary to state that the value of the exports from that little port for the year ending June 30, 1903, amounted to \$32,592. There are other lime quarries and lime works in the state of lesser importance.

WATER POWER DEVELOPMENT.

With the increasing demand for cheap power in the operation of machinery for lighting purposes and the operation of railways, capitalists interested in these lines are becoming more and more interested in the numerous natural water powers that are so abundant in this state.

The Snoqualmie Falls, 268 feet high and of large volume, have been appropriated and a power plant there established. This plant represents an investment of \$1,000,000; this company has electric wires running to Seattle and Tacoma, furnish power for electric lighting and manufacturing purposes.

The city of Seattle is developing a power on Cedar river for the purpose of establishing an electric lighting system and for other purposes in that city.

The Seattle Electric Company and kindred interest are developing a power from water to be supplied from some of the streams flowing from Mt. Rainier.

There are valuable water powers in Snohomish county, one of which it is alleged is soon to be developed by the Everett Street Railway and Electric Company.

In fact there is no limit to the water power that can be developed in the state where there are such falls as those of the Nooksack, Skagit, Stillaguamish, Skykomish, Snoqualmie and numerous other rivers on the west side of the mountains, and the Tumwater and Chelan Falls, together with many others of less value in Eastern Washington. But perhaps the most important, at any rate at present the most highly developed, are the Spokane Falls. Here the power is utilized for lighting purposes, operating electric railways, turning the wheels of grist mills and many other industries.

The fact that water power is so abundant in the state will prove a great factor in the future development along manufacturing lines, and will be of great benefit to the business interests of the state.

THE UNITED STATES MINT.

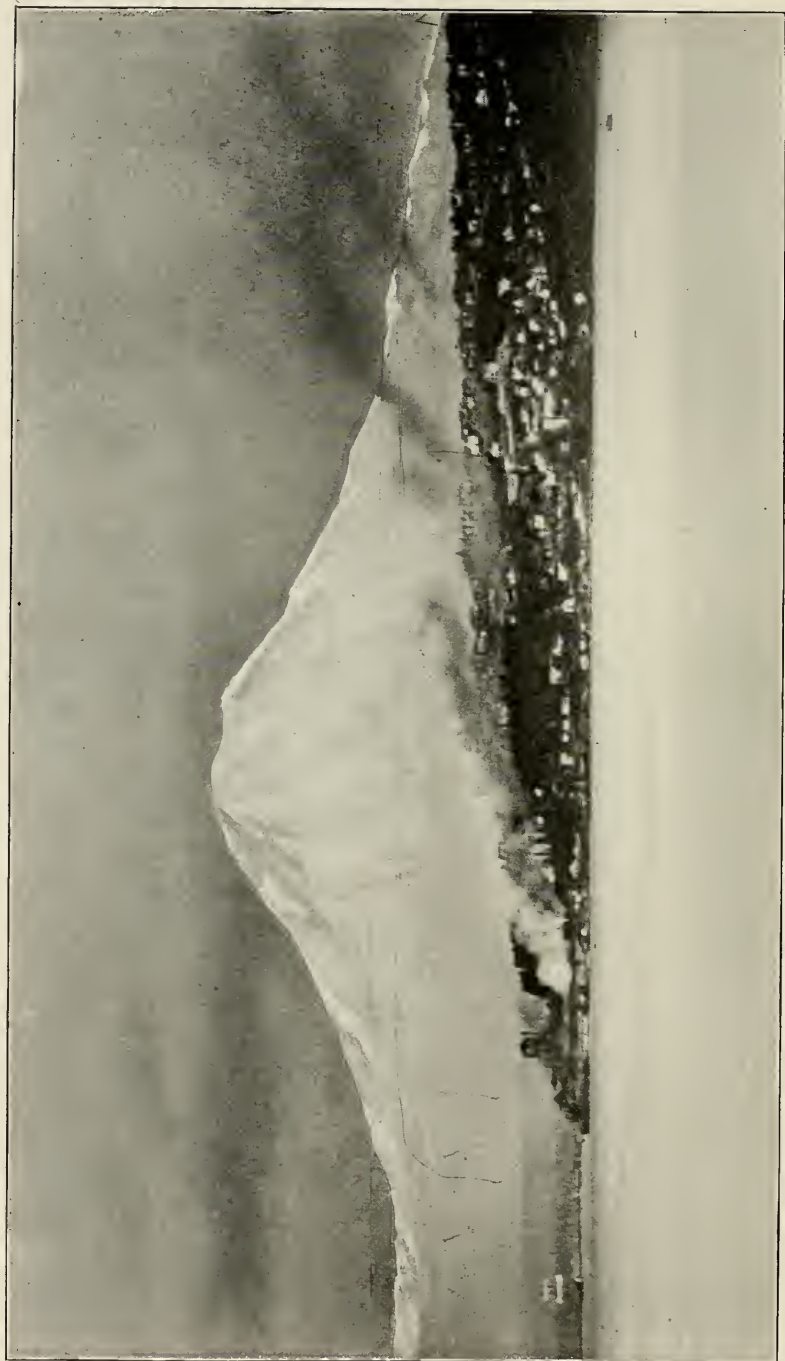
The branch of the United States mint, located at Seattle, continues to receive large sums from year to year. It will be interesting to the reader to know that for the first five years since the establishment of the mint, July 15, 1898, it has received \$73,364,790.18.

From the report of the assayer in charge we glean the following :

Received from Nome, Alaska.....	\$11,285,971.08
Received from balance of Alaska.....	2,654,037.79
Total for Alaska.....	13,940,008.87
From British Columbia and Canada (Klondike).....	54,842,144.37
From Washington, Oregon, Idaho and Montana.....	1,153,856.47
Total.....	\$73,364,790.18

For the entire amount there were about 25,000 deposits, and an aggregate weight of gold of 150 tons. This does not represent the total output of the districts named by any means, as heavy consignments have been made each year to San Francisco, and many gold hunters have carried their wealth East and it has found its way to Philadelphia, New York and elsewhere.

The fact that this branch of the mint is located in our state is of considerable importance to her citizens, and this magnificent



TACOMA.

showing is a standing advertisement of the fact that Puget Sound is the distributing point for the Northwest and Alaska.

IRON AND STEEL PLANT.

Another important industry of the state, which gives much promise, is the establishment of an iron and steel plant. Some years ago a plant was established and put in operation at Irondale, Jefferson county. It was operated successfully for some time, and for some unknown reason, believed to be the lack of the raw material, the plant was closed. This institution has been picked up, rebuilt, and is now manufacturing a good quality of pig iron.

A large part of the product of this plant is being used by the Moran Bros. Company in the construction of the battleship Nebraska. To give an estimate of the value of such a plant we quote the following: "It is stated that 125,000 tons of steel annually are required for the maintenance of the existing railroads on the Pacific Coast, and between 50,000 and 60,000 tons of tin plate, sheet iron, bar iron and various forms of iron are used.

"For pig iron alone the people of this state pay eastern manufacturers \$3,000,000 a year. The freight charges on all iron used on the Pacific Coast amounts to \$7,000,000 annually. This item and more could be kept on this coast if the raw materials that exist here in abundance were manufactured into the finished product on Puget Sound." It would not only be a saving of freight charges, but it would mean the employment of thousands of men and the annual distribution of wages amounting to hundreds of thousands of dollars. Such a work would mean more coal to be used, more iron to be dug, more timber for charcoal, more lime and materials of all kinds. The jobber, the merchant and the people of our state generally would reap the first large profits. We can state that quite a number of our influential citizens are interested in this proposition, and we confidently believe that it is only a matter of time until a large part of the iron and steel used on the Pacific Coast will be manufactured here, and that the benefits resulting therefrom will inure to the benefit of the people of the sound instead of being paid out in freight charges as above stated.

PUGET SOUND NAVY YARD.

The Puget Sound Navy Yard is situated on Port Orchard bay, an arm of the sound extending into Kitsap county, and about fourteen miles from the city of Seattle. Port Orchard bay is land locked and so situated that it would be absolutely secure from attack in case of war, for no foreign vessel could ever survive and reach a position from which to do any damage to this important government naval station. This would be true even without fortifications, as the waters could easily be protected by a system of torpedoes, but it is further protected by a line of forts that are being established, *i. e.*, Forts Worden, Alger, Casey, Bemis and others still to be located.

Work was commenced on this yard about 1892, and the dock was constructed and a naval station established thereafter. The Spanish-American war demonstrated to the government the need of a fully equipped navy yard, capable of doing all classes of work, and after that outbreak larger appropriations were made for buildings and equipment, until now the yard is well supplied with buildings and appliances of modern and approved type, and to-day the yard is one of the leading navy yards of the country. This yard has the only government dry dock on the Pacific Coast capable of receiving large battleships of the navy. The Oregon, Iowa, Wisconsin and other vessels have been successfully docked, cleaned and repaired, and we have no doubt that the government will continue to improve and enlarge the same until it becomes a navy yard of the very first-class. This is a government institution, but notwithstanding that fact hundreds of men are employed there and they spend their money with our merchants, and the yard draws largely for its supplies upon the business interests of this state. It is for that reason a valuable enterprise.

SMELTERS.**The Tacoma Smelter.**

The Tacoma smelter was erected and began smelting ores in 1890. This smelter is located at the city of Tacoma, in Pierce county, and for years has been under the management of W. R. Rust. It is the property of the Tacoma Smelting & Refining Company, and has a capacity of about 700 tons of ore per day. We are not able to give the exact figures, but its capacity is

about 175,000 tons of ore annually, and the value of the ores smelted amounts approximately to \$4,000,000.

The Everett Smelter.

The Puget Sound Reduction Company has a plant at Everett, in Snohomish county. This plant was established in 1894, and has been operated almost continuously since that date under the management of W. C. Butler. It has a capacity of 350 tons of ore per day, and an annual output of about 100,000 tons. The value of the ore smelted at this plant is approximately \$2,500,000. In addition to its other facilities, this smelter has an arsenic plant, which is a valuable adjunct to the industry.

The Northport Smelter.

There is a smelter located at Northport, Stevens county, which has been in operation for a number of years. We have no data or information on which to base any report as to capacity, output or value of product.

CONDENSED MILK FACTORIES.

The business of manufacturing condensed milk or cream has become an industry of great importance in this state. With the rapid increase in our agricultural and particularly our dairying interests, this industry will be further developed, as there is an ever increasing demand for the product.

The Pacific Coast Condensed Milk Company was the first to establish a plant, their factory being at Kent, King county. It was established some five years ago. They manufacture the Carnation brand of cream or sterilized milk, and it is said to be of the finest quality, and is a popular brand on the market.

Another factory has been established for some years at Chehalis, in a rich dairying section of the state. This company manufactures the Primrose brand of sterilized cream and condensed milk, which is, according to reports, of a quality equal to the Carnation brand.

A factory has this year been established at Auburn, King county, which is a branch of the Borden, a large eastern concern engaged in this line of business.

MORAN BROTHERS COMPANY SHIP YARDS.

One of the greatest and most rapidly developing industries of the State of Washington, as elsewhere stated in this work, is that of ship building. That is not alone true of wooden ships, as might be implied, but it extends to the building of a battleship as well.

The Moran Brothers Company is located at Seattle and is now engaged in building the "Nebraska," one of the new type of U. S. battleships. This plant was founded by Robt. Moran, several years ago, in a small way, but has steadily grown, and in the past few years they have turned out some fine new vessels, among which was the U. S. army transport, "George W. Dickinson," and the torpedo boat destroyer, "Rowan;" and at their yards are continually found vessels of all sizes undergoing all kinds of repairs.

To appreciate the magnitude of this plant it is necessary that a person go to the yards and see it. There are 1,500 men continually employed and this number is increased from time to time. The pay roll alone is sufficient to maintain the ordinary lines of business in a fair sized city. The outer bottom of the "Nebraska" is now nearly laid and the inner bottom is in process of construction. All of the outer framework of the vessel is in place except the bow and stern. The machinery is in process of building and will be ready to put in place by the time the other parts of the vessel are completed.

With the enormous equipment that was necessary to be provided before assuming the construction of such a vessel as this, the plant has become of great importance to the city and state, and it is to be hoped, and we confidently believe, that the construction and completion of this vessel will be the means of bringing other and similar contracts, and that the enterprise will sustain itself and continue to grow and become one of the most important industries of the state.

RAILROADS AND TRANSPORTATION LINES.

The greatness of the State of Washington rests not alone in its capabilities for the production of almost everything useful to man, but it is great in size, being 350 miles from east to west, and about 200 miles wide from north to south. As elsewhere stated in this volume, the state is divided by the Cascade range of mountains, which run from north to south, and for that reason the progress of her development would naturally have been very slow if she had not had the means of rapid and easy communication between her two natural divisions. What might thus have been a disadvantage to the state has been completely overcome by the lines of railway by land and the steamboats of her rivers and the waters of Puget Sound. When the number and efficiency of these agencies are set forth it will be evident that the state has remarkable transportation facilities considering her age and population.

The state is traversed from east to west by two transcontinental roads, each terminating on Puget Sound. In addition to this the Canadian Pacific operates through trains, touching at ports on the Sound, and the O. R. & N. Railway, a part of the Union Pacific system, has a large mileage in Eastern Washington, running down the Columbia river on the Oregon side to its terminus at Portland, Oregon. The Southern Pacific also has a branch from Portland, Oregon.

THE NORTHERN PACIFIC RAILWAY.

The Northern Pacific is the pioneer line, having been built to Wallula in 1883, and to Tacoma in 1885. At first it crossed the Cascade mountains by a switchback, but in 1888 completed the construction of the Stampede tunnel, a fine piece of engineering work, thus binding together with cords of steel the eastern and western sides of the state. With the advent of the railway and the encouragement given to industry at all points, the development of the state was most rapid, and all her indus-

tries, including agriculture, irrigation, lumbering and mining, were greatly stimulated, and this railroad company and its officials have ever been on the alert for the upbuilding of the country, aiding and encouraging the people in the development of many industries and enterprises.

This railroad has a mileage within the state as follows :

	<i>No. miles.</i>
Main line.....	685.12
21 branch lines.....	570.90
Making a total of.....	1,256.02

These branch lines have been built from time to time in the localities as the development of the country would warrant, and we are pleased to note that since the publication of the report of this bureau two years ago the increase in branch lines is 123.99 miles. In addition to this, and not included, is the branch line from Coulee City to Adrian of about twenty miles, and the extension of the Gray's Harbor branch some thirty miles, now practically completed, and the Washington & Columbia River Railway, an independent line operating in connection with the Northern Pacific, and having a mileage in this state of 116 miles. So with these later extensions the Northern Pacific Company would have a mileage of 1,422.02 miles in this state.

Operating in connection with this railroad is a splendid line of steamers, which have been plying between Tacoma and other Puget Sound ports and the Orient for a number of years.

THE BURLINGTON ROAD.

The Burlington Railroad Company is operating in connection with the Northern Pacific and Great Northern, and through trains are run from Puget Sound to the East.

THE GREAT NORTHERN ROAD.

The Great Northern Railroad also traverses the state from east to west, and has also a line running from the city of Seattle which follows along the sound to the international boundary line at Blaine. This line has a mileage in the state of 477.86. The construction of the line was commenced in 1890, and the main line was completed in 1892, crossing the Cascade mountains by switchback, and was thus operated until 1900, when

the Cascade tunnel was completed. In this way another easy means of communication was established, bringing the two sides of the state nearer together.

A feature with the management of this road has always been to encourage the development of the land along its lines, and it has offered generous inducements in the way of transportation facilities to promote irrigation and other enterprises.

It has for a number of years been operating with the development of Oriental trade in view, and to that end has been under contract with the Nippon Yusen Kaisha, the great Japanese Oriental Steamship line.

Two great freight steamers are now being built at New London, Connecticut, the *Minnesota*, which was launched last April, and the *Dakota*, still on the ways. These boats when completed will be operated between the western terminus of the Great Northern Railroad on Puget Sound and the ports of the Orient. These boats are to be of the same size, and their dimensions are: Length, 630 feet; breadth, 73 feet, and molded depth, 56 feet. On a draft of 33 feet, the displacement will be 33,000 tons, and on a draft of $36\frac{1}{2}$ feet, the displacement will be 37,000 tons. They will be without doubt the largest and swiftest cargo carriers in the world.

THE SPOKANE FALLS & NORTHERN RAILROAD.

This road has a mileage of 139 miles and is a branch of the Great Northern Railway. This road has also constructed a branch from Kettle Falls, Stevens county, to Republic, a distance of 36 miles, and it is now announced that the Great Northern will build a line next year from Wenatchee through Chelan, Okanogan and Ferry counties, connecting with its branch at Republic. This will afford transportation to a valuable mining country, and will be the means of developing the agricultural interests of Okanogan county, which is a matter of no small consequence, as there are large tracts of land available for farming and stock raising in the country that such a branch line would reach.

THE O. R. & N. RAILWAY.

This company has a mileage in the state of 509.18 miles, running from Spokane to the Oregon boundary in Walla Walla

county. It also has numerous branches throughout the wheat belt of the state.

THE B. B. & B. C. RAILWAY.

This is a short line road with its headquarters and terminus at Whatcom. It is making several extensions and has done much for the development of Whatcom county. The company is said to be contemplating the construction of a line through the Mt. Baker Mining districts, crossing the Cascade mountains and extending to Spokane, where it will probably connect with some of the transcontinental lines.

THE PACIFIC COAST COMPANY.

The Pacific Coast Company is another line having its headquarters at Seattle, the business of the road being chiefly in delivering coal from the mines at Franklin, Black Diamond, Newcastle and other mines to the bunkers for shipment. The company is the owner of valuable mines at the different locations above named. It also operates a line of large steamers plying between Puget Sound ports, California and Alaska.

There are a number of other lines, chiefly logging roads, at various points in Western Washington.

RAILWAY TRAFFIC.

We are pleased to again be able to give our readers an approximate estimate of the freight originating in the State of Washington and carried by our railroads, through the courtesy of the Northern Pacific and Great Northern Railways, as the officers of these roads have very courteously furnished this bureau information along these lines.

This statement covers the year ending June 30, 1903, and is compared with a similar statement published in the report of this bureau for the year 1901, it shows a most gratifying increase in the transportation business and gives a good idea of our rapid growth and development. The comparative statement is as follows :



SHIPPING FRUIT, WENATCHEE, WASH

COMMODITY.	1901.	1903.	Increase in two years.
Hay	67,104 tons.	84,718 tons.	17,614 tons.
Wheat	578,397 "	1,054,523 "	476,126 "
Oats and other grain	72,203 "	86,899 "	14,696 "
Fruit and vegetables	35,157 "	60,610 "	25,453 "
Coal	2,029,617 "	2,637,938 "	608,321 "
Ores	8,247 "	83,825 "	75,578 "
Lumber and shingles	42,686 cars.	76,794 cars.	34,108 cars.
Other lumber products, chiefly logs	131,204 "	150,976 "	19,772 "
Miscellaneous	47,348 "	50,210 "	2,862 "

In addition to the foregoing there has been received at Puget Sound ports from other states and countries for trans-shipment over the various railroad lines during the past year, approximately 18,500 carloads of miscellaneous freight, against 16,000 carloads for the year 1901.

The management of the Northern Pacific and Great Northern Railroads have at all times been alert to advance the interests of the people of this state and it would seem, from the magnificent showing of freight shipments, that there is due appreciation of this fact, and that the business of the roads is in a healthy condition. As an evidence of the fairness on the part of the management of these roads we would say that some three years ago passenger fares were voluntarily reduced to three cents a mile, and as a further evidence of their desire to aid in building up the country, the same lines one year ago made a voluntary reduction of 10 per cent in the grain shipping rates from Eastern Washington points to tide-water.

These railroads have also for a number of years been giving homeseekers rates from the East, which have been of material benefit to those desiring to look over the country with a view to settlement, and which have been a strong inducement in bringing many people to this state.

This bureau is glad to acknowledge the courtesy of these roads in responding to requests for the information embodied in this report.

TRANSPORTATION BY WATER.

In addition to the railroad facilities above mentioned, there are lines of steamers carrying freight and passengers, which ply on the Snake and Columbia rivers in Eastern Washington, and on the Snohomish, Skagit and Nooksack rivers, emptying into

Puget Sound, as also on the Chehalis river, emptying into Gray's Harbor.

We have already mentioned two important Oriental lines in considering railroad transportation and the Pacific Coast Company. In addition to these, is the Boston Steamship Company, having a line of large steamers operating between Puget Sound, Hawaii and Oriental ports. This is the company that recently secured the contract for the transportation of stores and troops to and from the Philippine islands. There is also the China Mutual Steamship Company and the Ocean Steamship Company limited, which maintains a joint service between Puget Sound, Liverpool and Glasgow, via the Orient and the Suez canal. There is also a line operating between Puget Sound and Hamburg. The Empire line, the Washington & Alaska Transportation Company and a number of other companies operate splendid steamers in the coastwise trade, plying between the ports of Puget Sound, California, Oregon, British Columbia and Alaska.

An additional factor in the commerce of the state is what might be called the mosquito fleet, which, not counting small sailing and fishing boats, pleasure craft, such as launches, aggregate over three hundred vessels. These boats traverse the waters of the Sound, touching at the various points of call on its seventeen hundred miles of shore line and navigating the rivers which flow into it. It is estimated that these steamers carry annually 1,750,000 passengers, and approximately 1,300,000 tons of freight. It will thus be seen that the people of Puget Sound have unexcelled advantages in the matter of marketing their products.

STREET RAILWAYS.

A matter of great importance to the cities of the country, and one which has been well developed in the past few years, is rapid transit. It is only a few years since in our larger cities the horse car was in vogue, but with the advent of electricity that has superceded as a motive power almost exclusively, except on extreme grades, where the cable prevails. In respect of street car service the cities of Washington are up to date and on a par with the best equipped cities of the land.

The Seattle Electric Company operates approximately 100 miles of street railway in the city of Seattle, giving a service equal to any of our eastern cities. This company employs about 800 men.

The Tacoma Railway & Power Company owns and operates the lines in the city of Tacoma, giving a first-class service in every particular. This company employs 350 or 400 men in the various branches of work necessary to carry on such an enterprise.

The Washington Street Railway & Water Power Company, of Spokane, owns and operates the electric lines in that city. It employs some 200 men, giving the city a first-class service.

The Everett Railway & Electric Company is the owner and operates the electric lines in the city of Everett. This company has a well equipped system and employs 100 men, giving that city an up-to-date service.

There is an electric line operating a road between the cities of Whatcom and Fairhaven, employing about 100 men.

The city of Olympia also has an electric line in operation.

In addition to the aforesaid lines, the Seattle & Tacoma Interurban is a line operated on the third rail system between the cities of Seattle and Tacoma.

There is also a line of road being built between the cities of Aberdeen and Hoquiam in Chehalis county.

CONCLUDING AND MISCELLANEOUS NOTES.

We have no doubt that this report will pass into the hands of a great many people who have perused former reports of this bureau, and they will readily see that it is a continuation of the thought which we endeavored to develop at that time, a thought which is only measured by the vast resources of this state. The opinion that has heretofore existed in the minds of many people of the East with reference to the wild and unsettled condition of the State of Washington, has undergone a change since the distribution of our former report. But whereas we were then able to state that it was the home of 600,000 people, we can now say that it contains at least 800,000 population. This statement does not necessarily conflict with our estimate elsewhere given of 759,687, since that estimate was based upon returns taken last spring, and it has since increased at least 40,000.

Our eastern friends wonder what class of people is thus immigrating to our state and where we get all this additional population. We can safely say in answer to this that they come from all lands, but more especially from the North Central States, and they are energetic and ambitious people, who being dissatisfied with conditions further east have come out here to make their homes and assist in the development of this great state. It is not necessary to state that people who have the spirit to come west with this purpose in view soon partake of the spirit of this new country and become most aggressive in business and general pursuits of every character.

The reader has only to refer to the article on Education, which fully describes our facilities in that respect, and which there is a brief reference to the other agencies of intellectual life, including public and private libraries, and the publication of daily and weekly newspapers in the towns and cities of the state. We have large daily papers in the cities of Seattle, Ta-

coma, Spokane, Everett, Whatcom and Walla Walla, and those of the larger cities are equal to the best newspapers of the land.

Not only the men partake of the spirit of the west, but the women of our state are ever on the alert in methods of social and mental improvement. There are numerous women's clubs, art clubs and music clubs, all of which are doing their part in the betterment of the intellectual, moral and religious atmosphere of the state.

While the conditions existing in our state make it necessary that greater energy and closer application to business methods should be pursued, the newcomer is not long in learning that fact, as well as in finding out that there is a lack of that conventionality which exists in the East. The people of the state are peaceable, obeying the laws which have been enacted to secure the safety and comfort of its citizens. Any infractions of the law are vigorously prosecuted.

EXEMPTION LAWS.

The people of the state, who from any cause become unable to pay their debts, are protected from penury by having exempted from sale under execution, a reasonable amount of property. Every head of a family is entitled to a homestead, consisting of the dwelling house in which he resides, together with the land on which the same is situated, not exceeding in value the sum of \$2,000. In addition to this, he also has exempted family wearing apparel, private libraries, household goods and a certain number of cows, horses, mules and other live stock, tools, utensils, etc. Professional men are exempted libraries, office furniture, fixtures, etc., to the value of \$1,000. Pension money, the proceeds of fire insurance on exempted property, and the proceeds of all life and accident insurance is exempt from liability on account of debt. Also the separate property, real or personal, of a married woman, belonging to her prior to, or that she may have acquired subsequent to her marriage, is exempted from judgment and execution on any liability of her husband. Personal property to the value of \$300 is free from taxation, and the earnings of all laboring men, earned within ninety days, to the value of \$75, is exempt from garnishment. The legislature of the state has also provided ample protection to the working classes in the enactment of lien laws whereby every man exer-

cising this right can protect himself against loss for labor performed.

HEALTHFULNESS.

The State of Washington has pre-eminently a healthful climate, and by reason of its topography a person may find almost any climate he may desire, and can also find any altitude, from that of the sea level to the top of the highest mountain, Rainier, 14,529 feet high. On Puget Sound and the coast, west of the Cascade mountains, there is the invigorating and healthful salt breeze from the Pacific ocean, and east of the Cascade mountains the atmosphere is dry and warm, and has a strong tonic influence upon all such persons as require a warm dry climate. The nights are always cool, even after the hottest days in summer, which insures vigor and comfort to the inhabitants. The variations of temperature are slight as compared with other states, and the people are not subjected to sudden climatic changes, which are so detrimental to health. The medium or low temperature renders innocuous the miasmas or other deleterious exhalations which might be engendered by extreme heat, and as a consequence malarial diseases are at a minimum. From all the data available, we have had no occasion to change our estimate of the death rate as shown in our last report, *i. e.*, since 1890 the highest death rate has been 1 in 153 of the estimated population of the state, or about $6\frac{1}{2}$ per thousand. If we compare this with the death rates of other states and countries, we find that it is a decided evidence of the healthfulness of our state and its climate.

WHO SHOULD IMMIGRATE TO THIS STATE.

We are of the opinion that when a man has passed the meridian of life he should hesitate before moving from a country or locality where he has long resided and where he is familiar with the local conditions, and consider well before removing to a new country where conditions are so much different. But the young man of energy, who is on the sunny side of life, who has ambition, pluck and hopefulness, can make no mistake in coming to this state, for such as these are able to help in the development of the country. For with their youthful strength they can not only carve out farms and establish industries which will provide for their own maintenance, but they can also add to the

general wealth of the state. Then again the man who is looking for investment can certainly find some inducement within the covers of this report to investigate our resources, and an earnest investigation we are assured will bring practical results. As stated in our former report the invalid and shiftless class fare better in the thickly populated parts of the country, and those who expect to get something for nothing, had better not come here.

It is not advisable for a person without means to immigrate to any great distance, for the reason that in order to become properly established in a new home requires time. Hence to those who wish to come to the State of Washington, we would say that they should have sufficient funds to get properly located, with a little time to look around and secure either a piece of land or suitable employment. To those who have money for investment we would say that they should expect to take time to investigate the many lines of industry before engaging in a permanent business. If these suggestions are followed there can be no doubt that each individual will accomplish something of benefit to himself and at the same time enlarge the opportunities for others.

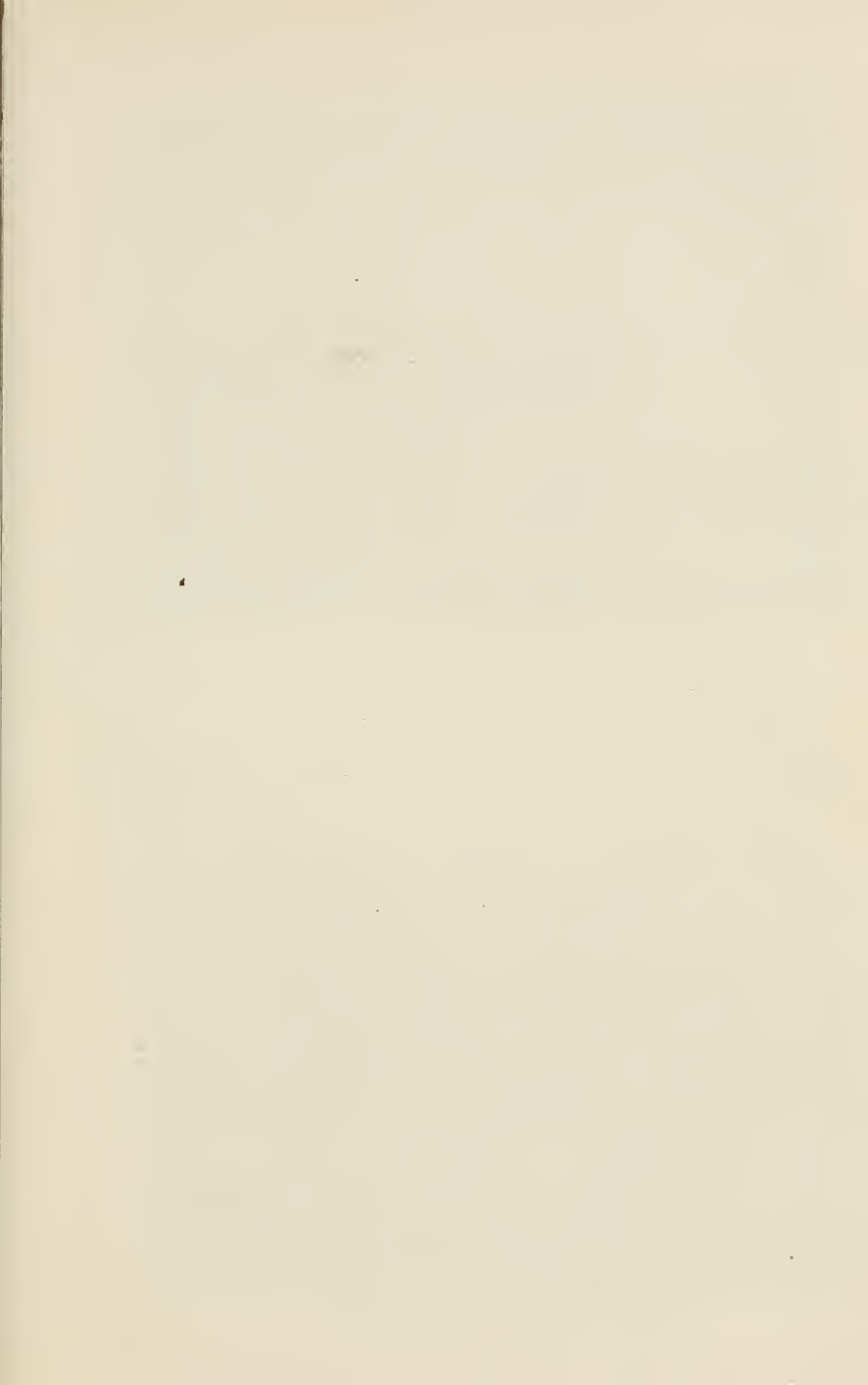
In the past it has been considered that among the advantages offered by a new country was the privilege of taking up government land, and to some extent this belief still prevails, but it is a well known fact that in every part of the United States the best portions of the public land have been appropriated under the various acts authorizing the same. However, there is a considerable amount of land somewhat remote from transportation to be had, and the homesteader may yet find a claim that will reasonably repay him for intelligent development. If he is unable to procure government land there are still opportunities to purchase lands in this state at reasonable prices that will well repay the man who will undertake the development of the same.

The tendency of the people in past years to settle in the cities is increasing, and the population of the towns and cities of the country are being continually augmented by the influx of people from the rural districts. That which is true of the rest of the country is true also of this state. As illustrating that we might refer to the city of Seattle, which, since the census of

1900 has increased 41,000, or more than 50 per cent; the city of Tacoma has increased 15,000, or about 40 per cent; Spokane, 11,000, or about 30 per cent; Whatcom has increased 8,000, or 133 per cent, and Everett 12,000, or about 150 per cent. The average increase of these five cities has been 80 per cent, while the general increase for the state has been but 45 per cent in the same length of time. In view of these facts we stated in our introduction that the interest which we most desired to encourage at this time is the agricultural development of the state. We there stated and here reassert that upon the success of this branch of industry is based the hope of every other, for of it every other industry is born. We believe this to be true, and hence the people who come to this state with the intention of engaging in agricultural pursuits or along kindred lines of dairying, stock raising or fruit growing, etc., are the ones most desired and needed, and all such can feel assured of success, if reasonably competent. For as we have hereinbefore frequently stated, all of the products of the farm, including beef, mutton, butter, eggs, cheese and fruit have a ready market at top prices right at the door of the producer, and always bring the best returns.

OPPORTUNITIES TO SECURE LAND AND RULING PRICES.

Next to the nature of the pursuit to be followed the question of greatest interest to the prospective settler is, as to where he can get land, how and at what prices. As to getting government land it may be said that there is little left in the older counties, or near the principal lines of transportation. However, there is some government land open for settlement, but all of that is going fast. This can be found in Okanogan and Ferry counties, in the former Colville Indian Reservation. This was opened to settlement in 1900; this is the region about Mt. Bonaparte, Chesaw being the chief place. It is a very desirable region and still furnishes inducements to those seeking free homesteads. It is a land of alternate hills, valleys and plateaus, somewhat colder in climate than most of the eastern part of the state, and with more rain, having both timber and water in abundance, and with many attractions. At present it is somewhat remote, being without railroad connections, but the proposed Bellingham Bay & British Columbia Railroad from





COMBINED HARVESTER AND THRESHER.



STEAM HARVESTER AND THRESHER.
Used in the wheat belt of Eastern Washington.

Whatcom to Spokane will tap this great region and bring its wealth of mines and farms into communication with the world. The present route into that country is by the Great Northern Railroad to Wenatchee on the Columbia, and thence by steamboat to Brewster, then up the Okanogan. The homeseeker will do well to investigate in that direction. There is occasional free land of good quality in other parts of Eastern Washington, especially in Franklin and Klickitat counties, but little encouragement can be given to the intending settler that he can find it in time.

As to the prices of land already patented, it may be said that unimproved land in the new regions, such as Franklin, Douglas, Klickitat and Yakima, ranges from \$5 to \$20 per acre, according to location. Improved land may be found at from \$10 or \$15 to \$30 or \$40, somewhat according to the same factors. In Adams or western Whitman and Spokane, as well as Douglas and Lincoln counties, the prices range at from 50 to 100 per cent more than in the counties before mentioned.

In the foothill belt of Walla Walla, Columbia and Whitman counties, prices of wheat land range from \$10 or \$15 for rougher and more remote unimproved land to \$70 or even \$80 for the choicest well cultivated and conveniently located of the old farms.

There is also some government land to be had in the eastern portion of Lewis county and in the other valleys of Western Washington. There are also large areas of logged off land in Western Washington that at moderate expense can be converted into first-class grazing and fruit lands. This can always be purchased at reasonable prices.

In view of all these facts it will be seen that it is possible for the immigrant with a small amount of money, if carefully invested, to secure for himself a reasonable living and advance into the possession of a permanent and profitable business. The class of people that we want to immigrate to this state is intelligent farmers with enough money to secure the necessary location, who will improve the lands and make homes. The country is well supplied with artisans in nearly every branch of industry, but with the influx of population and the state growing as rapidly as it is at present, there will always be an increased

demand for skilled labor ; hence the settler whose time is not fully occupied when he comes to the state, can, if he desires, procure work at other occupations during certain seasons of the year, and by this means any energetic young man of limited means can make himself a home in this state.

COST OF LIVING AND BUILDING.

It will no doubt be of interest to intending immigrants to know something of the cost of making improvements as well as of living before coming to this state. The cost of living and making improvements on property depends largely of course upon the individual. Everything that is necessary to the construction of comfortable buildings is procurable in this state. Lumber can be had at reasonable prices on all the streams and transportation lines, and the lumber for the construction of a comfortable five-room cottage can be bought for \$200. It is possible for the settler who wants a cheaper home to build a log house or a house made from split cedar boards or "shakes." Such houses are perfectly comfortable, and aside from the labor involved their cost would not be to exceed \$50. A good quality of flour can be purchased at from \$3.60 per barrel up. Groceries and provisions of all kinds can be had at the same prices that prevail throughout the middle west states.

We would advise all intending settlers that it is not worth while to pay freight on heavy articles, if coming from long distances, for all household articles of furniture, etc., can be bought here as cheaply as elsewhere in the country. Therefore, if the charges for bringing your furniture or farm implements exceed the difference between what you can sell those that you now have and the prices of new articles of a like kind in the neighborhood where you are living, you had better sell and buy new upon your arrival. The cost of transporting clothing, bedding, etc., is not very great, and people usually ship them. If the distances are not too great, the owners of well bred stock might do well to ship them to this state, as blooded or high grade stock is in demand, and the development of that industry is desired.

ROUTES TO THE STATE.

All agents of the Northern Pacific, Great Northern or Burlington Railway lines, on request, will furnish information as to

rates, both passenger and freight, to all points within the state, and if you wish to immigrate to Washington you would do well to buy your tickets via one of these lines.

UNRESERVED AND UNOCCUPIED LANDS.

As hereinbefore stated, there is still some government land to be had in the state, a large portion of which, however, is classed as uncultivable, although there is no doubt that considerable portions of the same will be found to be tillable and equal in fertility to many other lands differently classed. It is unnecessary to enter into the details of the manner of obtaining claims on United States lands, as all such information can be had on application from the United States land offices located in the various districts, seven of which are to be found within the borders of the state.

From the statements furnished this office by the various United States land offices in the state, we find that on July 1, 1903, there were 9,485,194 acres of unappropriated and unreserved land within the state, of which 4,464,183 acres are surveyed.

Of lands reserved and appropriated at the same time, there were 42,736,880 acres. For the number of acres by counties and United States land office districts, the reader is referred to the United States land office tables published in this volume under the head of Miscellaneous Statistics.

STATE LANDS.

The State of Washington is the owner of large tracts of land through the generosity of the general government, which in addition to sections 16 and 36 in each township, set aside for creating a permanent school fund, granted to the state the following lands:

	<i>Acres.</i>
For public buildings at the State Capitol.....	132,000
For University of Washington.....	46,080
For Scientific School.....	100,000
For State Normal Schools.....	100,000
For State Reformatory, Charitable, Penal and Educational Institutions.....	200,000
For Agricultural College.....	90,000
Total.....	668,080

From a summary of the report of the State Land Commissioner it appears that most of these lands have been selected, and we herewith set forth the condition of the several grants as follows:

PUBLIC BUILDINGS	Area selected.	Area approved.	Area yet to be selected.
Public buildings at State Capital, section 17.....	113,734.24	89,901.89	1,215.57
Public buildings at Capital under section 12.....	35,841.22	31,986.62	*222.62
State Charitable, Educational, Penal and Reforma- tory Institutions.....	209,900.88	200,000.03	.....
State Normal School.....	107,372.52	93,254.77	2,104.50
Scientific School.....	112,463.96	97,084.24	19.07
Agricultural College.....	104,101.81	86,846.62	*111.34
State University.....	46,851.69	44,999.00	* 11.69
Indemnity.....	231,645.76	39,671.50	.....
Totals.....	961,912.08	683,744.67	3,339.14

*Overselections.

It will thus appear that aside from the indemnity lands these grants have been practically all selected. The indemnity lands referred to are those lands granted to the state in lieu of sections 16 and 36 that have been homesteaded, sold or otherwise appropriated, and the amount as yet is indefinite.

From a further statement appearing in the report of the land commissioner it would appear that there has been 44,870 acres of the state lands disposed of, for which deeds have been issued, and there are contracts for 45,353 acres outstanding. This indicates that the larger part of these lands are still the property of the state. Of that not sold, however, the greater part is leased, the state receiving as rentals therefore the sum of \$66,279.45 a year. The minimum price for which state lands can be sold is \$10 per acre, and the minimum price at which they can be leased for agricultural purposes is 10 cents an acre per year, the leases to run not more than five years. Any person wishing information as to how these lands can be purchased or leased, may obtain the same by applying to the Commissioner of Public Lands, Olympia, Washington.

THE STATE BY COUNTIES.

As the principal work of this volume has treated of the state in its entirety, very fully dealing with the resources and particular industries, and so written as to cover its several physical divisions without reference to county lines, we herewith give a brief description of the several counties of the state, thus localizing the work.

As stated in our introduction, the assessors of the various counties have responded more promptly than in the past, consequently we trust there will be little criticism of our report upon the several localities, but of necessity these reports must be concise and brief.

ADAMS COUNTY.

Area of the county 2,400 square miles; population, 1900, 4,840; estimated for 1903, 9,646.

Transportation facilities: The N. P. Ry. passes diagonally across the county from northeast to southwest, and a branch of the O. R. & N. Ry. touches the southeast corner of the county. The soil is chiefly a volcanic ash, common to all of Eastern Washington. It produces fine grain and vegetables. Fruits of all kinds are grown in the county. The most important industry is wheat raising. The product for 1903 amounts to about 3,000,000 bushels. Stock raising is on the increase and is becoming an important industry.

There are seventy-five school districts and three graded schools in the county. The total valuation of school property in the county is \$86,695. The valuation of real property, including improvements, is \$3,027,679.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules	12,415	\$186,225
Cattle	10,041	160,656
Sheep	23,786	47,475
Hogs	4,458	13,359

RITZVILLE is the county seat, situated on the N. P. Ry. Its population is 1,410. It has a high school, a bank, newspaper and several churches. The county officers are :

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	C. H. Neal.....	Davenport, Wash.
Auditor.....	Lincoln Laughlin.....	Ritzville, "
Sheriff.....	T. C. Shorna.....	" "
Clerk.....	Geo. T. Christensen.....	" "
Treasurer.....	Cecil D. Linn.....	" "
Attorney.....	C. L. Holcomb.....	" "
Assessor.....	Louis Walton.....	" "
Supt. of Schools.....	W. J. Lansing.....	" "
Surveyor.....	T. W. Hanschild.....	" "
Coroner.....	J. W. Henderson, M. D.....	" "
Commissioner 1st Dist.....	H. E. Hill.....	" "
Commissioner 2d Dist.....	Jacob Schoessler.....	" "
Commissioner 3d Dist.....	J. M. Batten.....	" "

ASOTIN.

Area of the county 640 square miles; population, 1900, 3,366; estimated population, 1903, 5,834.

Transportation facilities: The O. R. & N. and N. P. Ry. have lines to Lewiston, and steamers ply on the Snake river.

The general surface of the county is level, but in the southern portion of the county a spur of the Blue mountains furnishes an abundance of timber. Asotin creek divides the county, and together with the Snake river, which runs along the eastern boundary, furnishes plenty of water for irrigation.

Farming is the principal industry. One of the most highly developed irrigated sections in the state is Vineland, on the Snake river in this county. All kinds of fruit of the finest quality are grown here, and by reason of the favorable conditions which prevail its products reach the market from two to four weeks earlier than those of other districts, and command the highest prices.

There are twenty-nine school districts in the county and two towns where graded schools are maintained. The total valuation of school property for 1903 is \$37,443. The value of real property, including improvements, is \$685,152.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	4,380	\$ 65,700
Cattle.....	9,117	145,872
Sheep.....	42,448	84,896
Hogs.....	3,290	9,807

ASOTIN is the county seat, situated on the Snake river. Its population (estimated) in 1903, is 794. It has a good graded school, several churches and is the shipping point for the county. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	Chester F. Miller.....	Dayton, Wash.
Auditor.....	James B. Bell.....	Asotin, "
Sheriff.....	Robt. H. Richards.....	" "
Clerk.....	W. G. Woodruff.....	" "
Treasurer.....	Chas. S. Florence.....	" "
Attorney.....	Elmer E. Halsey.....	" "
Assessor.....	R. A. Wilson.....	" "
Supt. of Schools.....	Lillian Clemans.....	" "
Surveyor.....	J. Swain.....	" "
Coroner.....	H. R. Merchant.....	" "
Commissioner 1st Dist.....	Jackson O'Keefe.....	" "
Commissioner 2d Dist.....	Bert Yoeman.....	" "
Commissioner 3d Dist.....	C. T. Cowan.....	" "

CHEHALIS.

Area of county 2,600 square miles; population in 1900, 15,124; estimated for 1903, 18,148.

Transportation facilities: The county is reached by a branch of the N. P. Ry. extending along the south side of Grays Harbor to Ocosta, and on the north side via Aberdeen and Hoquiam to a point near the south boundary of the Quinault Indian reservation. It also embraces within its boundaries Grays Harbor, an important shipping point where vast cargoes of lumber are shipped to California and foreign ports.

The principal industry of the county is lumbering. It is said that this county contains the finest forests of standing timber to be found anywhere in the state, and particularly spruce of the finest quality is here found in addition to fir, cedar and hemlock of unexcelled quality. Lumber, manufacturing and ship building are the chief industries, large mills being located at Aberdeen, Cosmopolis, Hoquiam and other points, and ship yards on Grays Harbor.

The Chehalis and other valleys are being opened up, and the farming and dairying industries are rapidly increasing. The fishing industry in Grays Harbor is an important factor in the industrial life of the county.

There are seventy school districts in the county and eight towns where graded schools are maintained. The total valuation of school property is \$133,745. Total assessed valuation of real property with improvements is \$5,597,182.

	No.	Value.
Horses and mules.....	1,947	\$ 58,410
Cattle.....	8,693	139,088
Sheep.....	3,068	6,136
Hogs.....	1,458	4,374

MONTESANO is the county seat and has a population of 1,633. The other principal cities are Aberdeen, having an estimated population of 5,436; Hoquiam with an estimated population of 3,132; Elma with 1,193, and Cosmopolis with 1,034. In each of these cities are banks, newspapers, churches and good systems of public schools.

Office Held.	Name of Officer.	Residence.
Superior Judge.....	Mason Irwin.....	Aberdeen, Wash.
Auditor.....	W. D. Campbell.....	Montesano, "
Sheriff.....	J. A. Graham.....	" "
Clerk.....	J. W. Stamper.....	" "
Treasurer.....	Carl S. Weatherwax.....	" "
Attorney.....	Sidney M. Heath.....	" "
Assessor.....	F. R. Archer.....	" "
Supt. of Schools.....	P. A. Williams.....	" "
Surveyor.....	Geo. D. Robertson.....	" "
Coroner.....	Paul Smits.....	" "
Commissioner 1st Dist.....	C. N. Mills.....	" "
Commissioner 2d Dist.....	Stanley W. Smith.....	" "
Commissioner 3d Dist.....	Geo. L. Davis.....	" "

CHELAN.

Area 2,000 square miles; population, 1900, 3,931; estimated for 1903, 7,549.

Transportation facilities: The G. N. Ry. traverses the county from east to west, affording excellent facilities for marketing its products.

The soil is rich and when irrigated is adapted to all kinds of agricultural products. The rainfall is light, necessitating irrigation, but the supply of water for this purpose is ample. Between 25,000 and 30,000 acres of land in the Wenatchee valley is under irrigating canals, and this section has become famous for the quality, variety and amount of fruit that can be raised to the acre. The apples, apricots, peaches, grapes, pears, plums and melons grown here find a ready market at Puget Sound points and as far east as Chicago. There are numerous other valleys in the county suitable for agriculture and fruit growing, that portion surrounding and in the vicinity of Lake Chelan, rivaling the Wenatchee valley as a fruit producing section.

Lake Chelan, one of the scenic features of the state, is located in the northern part of the county. It is becoming a noted summer resort.

There are a number of valuable mining properties in the county, as yet but slightly developed. A small stamp mill has been erected at the "Cum mine" on the Entiat.

There are forty school districts in the county and eight towns where graded schools are maintained. The valuation of school property in the county is \$43,371; the assessed valuation of real property, including improvements, is \$1,310,513.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	2,322	\$46,440
Cattle.....	3,840	61,440
Sheep.....	4,088	8,166
Hogs.....	757	2,271

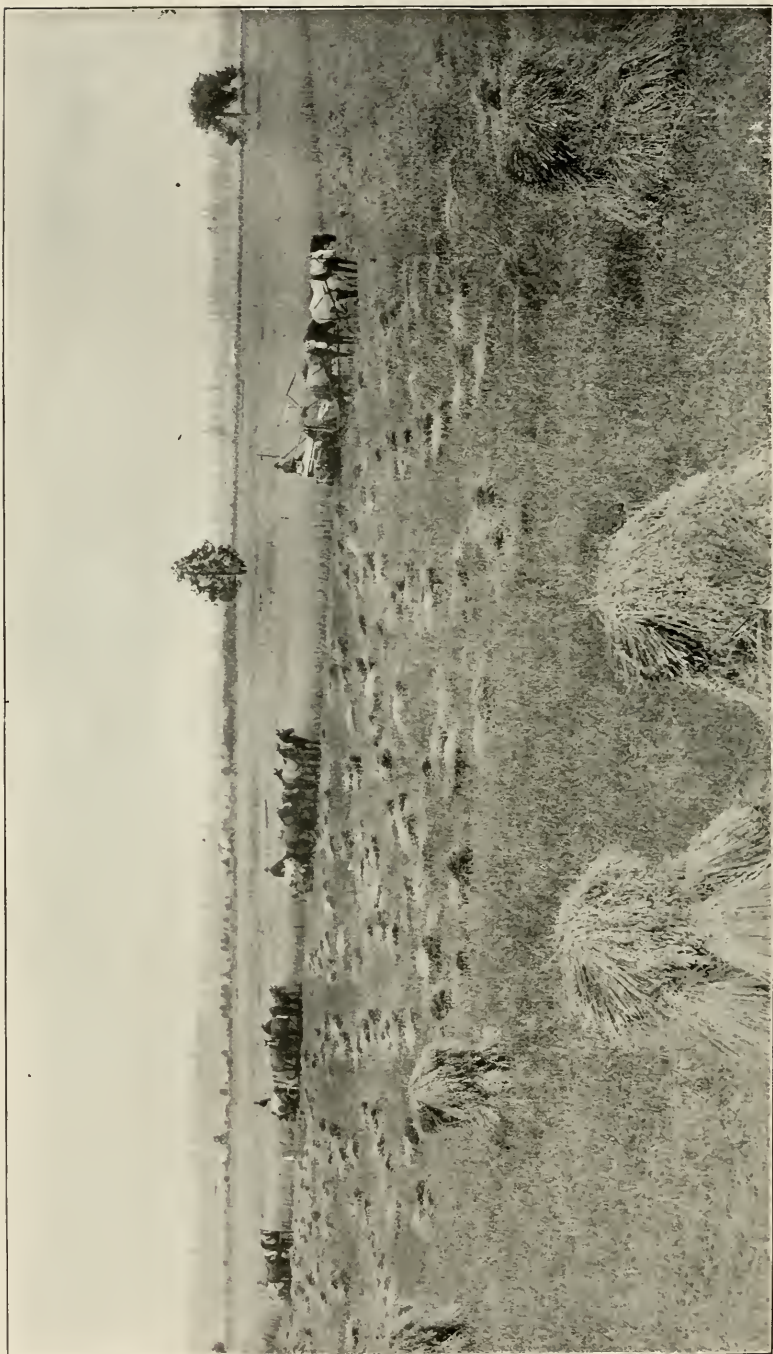
WENATCHEE is the county seat, located on the Columbia river and on the line of the G. N. Ry. It is a thriving town with schools, banks, newspapers, churches and enterprising citizens. Its population is now estimated at 2,121. Leavenworth, Mission, Lakeside and Chelan are other important towns. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	C. Victor Martin.....	Wenatchee, Wash.
Auditor.....	C. J. Trow.....	" "
Sheriff.....	F. F. Kellar.....	" "
Clerk.....	O. B. Fuller.....	" "
Treasurer.....	H. A. Graham.....	" "
Attorney.....	Frank Reeves.....	" "
Assessor.....	C. E. Buttles.....	" "
Supt. of Schools.....	John E. Porter.....	" "
Surveyor.....	W. R. Prowell.....	" "
Coroner.....	C. Gilchrist.....	" "
Commissioner 1st Dist.....	C. Rose.....	" "
Commissioner 2d Dist.....	Ed. Hineman.....	" "
Commissioner 3d Dist.....	Spencer Boyd.....	" "

CLALLAM.

Area of the county, 2,000 square miles; population in 1900 was 5,603; estimated for 1903, 5,912.

Transportation facilities: The county has no railroad as yet, but has ample means of communication by water, being located in the northwesterly corner of the state, and being bounded on the north by the Straits of Juan de Fuca, and on the west by the Pacific ocean.



HARVESTING OATS.
Western Washington.

The principal industry of the county is lumbering. The county is largely mountainous and covered with dense forests of fir, cedar, spruce and hemlock.

The soil upon which much of this timber stands is rich alluvial and is well adapted to fruit raising and agriculture when cleared. The valley of the Quillayute river and its tributaries, flowing into the Pacific ocean, is peculiarly fertile. There are a number of fine farms in the county, but a large area is still undeveloped.

Fishing is also an important industry. Food fishes of all kinds are abundant, and great quantities of halibut are caught on the Flattery banks.

There are forty-eight school districts in the county and one town maintaining graded schools. The valuation of school property in the county is \$60,198. Total assessed valuation of real property with improvements is \$2,282,086.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	1,041	\$26,025
Cattle.....	4,643	74,288
Sheep.....	2,928	5,856
Hogs.....	660	1,980

PORT ANGELES is the county seat, situated on a fine harbor about sixty miles from the ocean on the Straits of Juan de Fuca. It has a population of 3,443. The county officers are :

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	George C. Hatch.....	Port Angeles, Wash.
Auditor.....	Wm. B. Smith.....	" " "
Sheriff.....	Eugene E. Hopkins.....	" " "
Clerk.....	Wm. L. Church.....	" " "
Treasurer.....	Wm. E. Burnside.....	" " "
Attorney.....	Geo. H. Clementsen.....	" " "
Assessor.....	Ray Maxfield.....	" " "
Supt. of Schools.....	Harlan E. Risley.....	" " "
Surveyor.....	Wm. J. Ware.....	" " "
Coroner.....	A. D. Wilson.....	" " "
Wreckmaster.....	S. P. Raymond.....	" " "
Commissioner 1st Dist.....	Charles W. Thompson.....	" " "
Commissioner 2d Dist.....	E. F. Gierin.....	" " "
Commissioner 3d Dist.....	D. A. Christopher.....	" " "

CLARKE.

Area of county, 600 square miles; population in 1900, 13,419; estimated for 1903, 15,500.

Transportation facilities: A branch of the N. P. Ry. extends from Vancouver to Kalama, and steamboats regularly ply on the Columbia river, touching the county on its entire south boundary.

A large part of the county is heavily timbered, and lumbering is an important industry. A large portion of the county is level and the soil is rich. It contains large areas of grain-producing land and is adapted to all kinds of agriculture and grazing. Horticulture and fruit growing is the chief industry of the county. Apples, pears and other fruits are successfully grown, the prune industry being the most important. It is estimated that of the crop for 1903 there will be exported three hundred carloads, having a value of \$300,000. Dairying is an important and increasing industry.

There are seventy-eight school districts in the county and nine towns where graded schools are maintained. The total valuation of school property is \$86,349; total valuation of real property with improvements is \$4,080,850.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules	3,327	\$ 99,810
Cattle.....	13,234	211,744
Sheep.....	2,577	5,150
Hogs.....	3,035	9,105

VANCOUVER, the county seat, is situated on the north bank of the Columbia river. It has a population of 4,510 according to the estimation of this bureau. The State School for Defective Youth is located here, and it is the location of the U. S. army post, Fort Vancouver, and a U. S. land office. The city has first-class schools and is provided with banks, churches, fraternal societies, and has three newspapers, several sawmills, electric light plant and various manufacturing institutions. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	A. L. Miller.....	Vancouver, Wash.
Auditor.....	A. Burnham.....	" "
Sheriff.....	E. S. Biesecker.....	" "
Clerk.....	E. M. Scanlon.....	" "
Treasurer.....	Arthur H. Fletcher.....	" "
Attorney.....	Donald McMaster.....	" "
Assessor.....	A. F. Davis.....	" "
Supt. of Schools.....	Milton Pritchard.....	" "
Surveyor.....	Fred J. Bailey.....	" "
Coroner.....	J. M. Burt.....	" "
Commissioner 1st Dist.....	Robert Lowe.....	" "
Commissioner 2d Dist.....	D. H. Gary.....	" "
Commissioner 3d Dist.....	A. A. Quarnberg.....	" "

COLUMBIA.

Area of the county is 830 square miles; population in 1900 was 7,126; estimated for 1903, 7,604.

Transportation facilities: The O. R. & N. and the W. & C. R. Rys. have branches running to Dayton in this county, which afford ample transportation accommodations for the products of the county.

The Blue mountains occupy the southern portion of the county and add a large supply of merchantable timber to the resources of the county.

Farming is the chief industry of the county, and wheat and barley are the principal crops raised. Other crops, such as oats, corn, flax, sorghum and potatoes do fully as well as wheat. No irrigation is required in this county for the production of agricultural products. While wheat raising will doubtless continue to be the great industry of the county, the farmers are turning their attention more and more to fruit growing and stock raising with favorable results. About 4,635 acres of new land have been put under cultivation during the past year.

There are fifty-three school districts in the county and three towns where graded schools are maintained. The valuation of school property is \$105,136; the total assessed valuation of real property with improvements is \$2,729,722.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	8,179	\$204,475
Cattle.....	9,327	149,232
Sheep.....	30,093	60,186
Hogs.....	6,736	20,208

DAYTON, the county seat, is situated on the Touchet river, and has the advantage of the two railroads above mentioned. The city is lighted with electricity, has a good water system, fire department, weekly papers, churches, schools and a number of manufacturing plants. Its population is 2,745. Other towns are Starbuck, Huntsville and Riperia. The county officers are :

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	Chester F. Miller.....	Dayton, Wash.
Auditor.....	E. V. Thompson.....	" "
Sheriff.....	O. M. Stuir.....	" "
Clerk.....	Clark Israel.....	" "
Treasurer.....	E. W. Alcom.....	" "
Attorney.....	R. W. Brown.....	" "
Assessor.....	Wilbur Hopkins.....	" "
Supt. of Schools.....	W. W. Hendron.....	" "
Surveyor.....	John Patrick.....	" "
Coroner.....	C. H. Day, M. D.....	" "
Commissioner 1st Dist.....	C. W. Sanders.....	" "
Commissioner 2d Dist.....	James Wallace.....	" "
Commissioner 3d Dist.....	R. A. Jackson.....	" "

COWLITZ.

Area of county, 1,100 square miles; population in 1900, 7,877; estimated for 1903, 8,439.

Transportation facilities: The N. P. Ry. traverses the county from north to south, and the Columbia river forms its southern boundary.

A large part of the county is heavily timbered, lumbering being its principal industry. There are rich valleys within its borders that are being improved and are well adapted to agriculture and fruit raising. There are many fine orchards in the county, and the dairying interest is becoming an important industry.

There is said to be a fine bed of coal undeveloped in this county. In the eastern part of the county various discoveries have been made of quartz carrying gold, silver and copper, but as yet the same is not largely developed.

There are sixty-six school districts in the county and five towns where graded schools are maintained. The total valuation of school property is \$58,312; total assessed valuation of real property with improvements is \$3,101,325.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	1,079	\$ 32,370
Cattle.....	6,541	104,656
Sheep.....	1,097	2,194
Hogs.....	1,123	3,369

KALAMA is the county seat, situated on the Columbia river about forty miles below Portland. Its estimated population is 840. Other towns in the county are Castle Rock, estimated population, 1,403, Kelso estimated population, 1,106. These cities have banks, churches and good schools. The county officers are :

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	A. L. Miller.....	Vancouver, Wash.
Auditor.....	G. H. Thayer.....	Kalama.
Sheriff.....	E. E. Huntington.....	" "
Clerk.....	Ben Olsen.....	" "
Treasurer.....	E. W. Potter.....	" "
Attorney.....	W. F. Magill.....	" "
Assessor.....	James Downing.....	" "
Supt. of Schools.....	H. A. Taylor.....	" "
Surveyor.....	F. M. Lane.....	" "
Coroner.....	S. M. Wendt.....	" "
Commissioner 1st Dist.....	H. Caples.....	" "
Commissioner 2d Dist.....	Cornelius Lyman.....	" "
Commissioner 3d Dist.....	F. G. Barnes.....	" "

DOUGLAS.

Area of county, 4,500 square miles; population in 1900, 4,926; estimated population for 1903, 10,680.

Transportation facilities: The G. N. Ry. traverses the county from east to west, and boats ply on the Columbia river, extending from Bridgeport in the northern part of the county to the G. N. Ry. at Wenatchee.

This county is peculiar on account of its physical conditions, the Grand Coulee and Moses Coulee being topographical features. All that portion of the county lying south of the G. N. Ry. is dry and semi-arid, being in that portion of the state having the least precipitation, while that portion of the county lying to the north has different climatic conditions with plenty of rainfall, and produces fine crops without irrigation, and is one of the richest grain-producing sections of the state. There is a prospect that a beet sugar factory may be established in the vicinity of Waterville, and with all the improvements that are contemplated for this county, it is destined to become one of the richest of the grain-producing counties of the state.

In the vicinity of Wilson creek and Adrian there are several irrigation ditches in operation.

There are ninety-six school districts in the county and five towns where graded schools are maintained. The total valuation of school property is \$58,467; the total assessed valuation of real property with improvements is \$3,403,991.

<i>Live Stock.</i>	<i>No.</i>	<i>Value</i>
Horses and mules.....	12,780	\$255,600
Cattle.....	23,032	368,513
Sheep.....	40,290	80,580
Hogs.....	2,892	8,676

WATERVILLE is the county seat, situated on a plateau about six miles from the Columbia river and at an elevation of 2,640 feet. It is an important little city, having a bank, newspapers, churches and good schools. Its population as estimated for 1903 is 1,064. Other important towns of the county are Wilbur, with an estimated population of 1,193, and Wilson creek with an estimated population of 451. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	C. Victor Martin.....	Wenatchee, Wash.
Auditor.....	Ross T. Lord.....	Waterville, "
Sheriff.....	A. A. Lytle.....	" "
Clerk.....	A. N. Maltbie.....	" "
Treasurer.....	E. C. Davis.....	" "
Attorney.....	E. T. Trimble.....	" "
Assessor.....	C. T. Will.....	" "
Supt. of Schools.....	Eva Hagan.....	" "
Surveyor.....	Ole Rund.....	" "
Coroner.....	J. Frank Harris.....	" "
Commissioner 1st Dist.....	L. McLean.....	" "
Commissioner 2d Dist.....	L. A. McNaught.....	" "
Commissioner 3d Dist.....	J. L. Stewart.....	" "

FERRY.

Area of county about 2,150 square miles; population in 1900, 4,562; estimated population for 1903, 4,646.

Transportation facilities: Republic, the county seat, is reached by the R & G. F. Ry., a branch of the Canadian Pacific line. The G. N. Ry. also has a branch running from Marcus on the S. F. & N. Ry. to Republic. It is currently reported and understood that this line will be extended through Okanogan and Chelan counties to connect with the main line of the G. N. Ry. at Wenatchee next year.

This county is mountainous, and the chief industry is mining. There are several important mining districts, among which are the Curlew, Kettle River, Eureka, San Poil and Republic. Some valuable mines have been developed and are producing ore of high grade. There are considerable areas of farming lands, and large areas of bunch grass suitable for grazing purposes.

There are thirteen school districts in the county and one graded school at Republic. The total valuation of school property is \$19,744; total assessed valuation of real property with improvements is \$478,799.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	1,243	\$31,075
Cattle.....	1,378	22,048
Sheep.....	9,002	18,004
Hogs.....	320	960

REPUBLIC is the county seat, a flourishing little city located in the western portion of the county near the Republic mine. It has a bank, school, newspaper, churches and fraternal societies. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	C. Victor Martin.....	Wenatchee, Wash.
Auditor.....	Thomas F. Barrett.....	Republic, "
Sheriff.....	E. J. Lowry.....	" "
Clerk.....	George W. Spence.....	" "
Treasurer.....	J. E. Ritter.....	" "
Attorney.....	W. C. Brown.....	" "
Assessor.....	M. H. Joseph.....	" "
Supt. of Schools.....	Josepeine Grim.....	" "
Surveyor.....	N. J. H. Fortman.....	" "
Coroner.....	A. H. Manly.....	" "
Commissioner 1st Dist.....	Thos. E. Dulin.....	" "
Commissioner 2d Dist.....	W. T. O'Connell.....	" "
Commissioner 3d Dist.....	H. R. Alexander.....	" "

FRANKLIN.

Area of county 1,224 square miles; population in 1900, 486; estimated population for 1903, 3,615.

Transportation facilities: The main line of the N. P. Ry. passes directly through the county and has a branch southward to Wallula. A branch of the O. R. & N. also runs through the northern part of the county from Connell eastward.

This county lies chiefly in what is called the semi-arid belt, but in the eastern and northern parts of the county they have produced fair crops of wheat, and to this fact is attributable the large increase in population during the past three years, the county having increased during that period in population 643 per cent. The county no doubt in the future will be improved by irrigation, when it will become one of the rich producing sections of the state.

There are twenty-one school districts in the county and two towns in which graded schools are maintained. The total valuation of school property is \$17,849; total assessed valuation of real property with improvements is \$490,215.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	3,462	\$51,930
Cattle.....	1,087	17,372
Sheep.....	44,925	89,850
Hogs.....	195	585

PASCO is the county seat, a division point on the N. P. Ry. It has a population of 284. Connell is a wheat shipping point in the northern part of the county. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	Frank H. Rudkin.....	North Yakima, Wash.
Auditor.....	L. H. Koontz.....	Pasco, "
Sheriff.....	J. D. Peck.....	" "
Clerk.....	L. H. Koontz.....	" "
Treasurer.....	C. S. O'Brien.....	" "
Assessor.....	L. E. McClurken.....	" "
Supt. of Schools.....	John G. Gaiser.....	" "
Surveyor.....	Raymond Bland.....	" "
Coroner.....	Herman Kludas.....	" "
Commissioner 1st Dist.....	W. E. Blakely.....	" "
Commissioner 2d Dist.....	A. Livesley.....	" "
Commissioner 3d Dist.....	Wm. T. Anderson.....	" "

GARFIELD,

Area of county 672 square miles; population in 1900, 3,918; estimated population for 1903, 4,945.

Transportation facilities: A branch of the O. R. & N. Ry. extends westerly from Pomeroy, about the center of the county, and steamboats ply on the Snake river, which bounds the county on the north.

The southern portion of the county is mountainous, and the northern half rolling prairie. It is in the wheat belt of the state, and all kinds of grain, fruit and vegetables are grown. In addition to wheat growing, oats and large crops of barley are grown and harvested in this county.

There are forty-three school districts in the county and two towns where graded schools are maintained. The total valuation of school

property is \$49,413; total assessed valuation of real property, including improvements, is \$1,747,401.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	3,783	\$ 75,660
Cattle.....	17,574	185,184
Sheep.....	15,833	31,666
Hogs.....	1,509	4,527

POMEROY is the county seat. It is a little city having an estimated population of 1,659; it has railroad connection, a bank, newspaper, a high school and several churches. The county officers are :

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	Chester F. Miller.....	Dayton, Wash.
Auditor.....	Frank Burch.....	Pomeroiy, "
Sheriff.....	J. A. Strain.....	" "
Clerk.....	Attwood A Kirby.....	" "
Treasurer.....	H. A. Adams.....	" "
Attorney.....	J. T. Ledgerwood.....	" "
Assessor.....	T. V. Messenger.....	" "
Supt. of Schools.....	Nellie Vallen.....	" "
Surveyor.....	J. E. Tupper.....	" "
Coroner.....	C. G. Black.....	" "
Commissioner 1st Dist.....	J. C. Miles.....	" "
Commissioner 2d Dist.....	A. H. Malone.....	" "
Commissioner 3d Dist.....	J. R. MacMaster.....	" "

ISLAND.

Area of county, 227 square miles; population in 1900, 1,870; estimated population for 1903, 2,618.

This county is composed of two islands, namely: Whidby, being about forty miles long and varying in width from one to ten miles, and Camano island, about one-fifth the size of Whidby.

These islands are heavily timbered, and lumbering is one of the chief industries. In portions of the county are found considerable bodies of prairie and marsh lands on which splendid crops of oats, hay and vegetables are grown. There are many fine orchards, and apples, prunes, pears and cherries, together with berries of all kinds, are successfully grown.

There are eighteen school districts and two towns having graded schools. The total valuation of school property is \$17,845; total assessed valuation of real property, with improvements, is \$934,697.

<i>Live Stock.</i>	<i>No</i>	<i>Value.</i>
Horses and mules	705	\$21, 150
Cattle.....	2,246	35, 936
Sheep.....	2,930	5, 860
Hogs.....	759	2, 277

The county seat is Coupeville, situated on Whidby island. Its population as estimated for 1903 is 945. The county officers are :

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judges.....	Geo. C. Hatch.....	Port Angeles, Wash.
Auditor.....	W. H. McCaslin.....	Coupeville, "
Sheriff.....	A. J. Comstock.....	" "
Clerk.....	James Zylstra.....	" "
Treasurer.....	Jacob Smith.....	" "
Attorney.....	H. Frank Hubbard.....	" "
Assessor.....	E. E. Watson.....	" "
Supt. of Schools.....	Ella F. Meagher.....	" "
Surveyor.....	Geo. Bump.....	" "
Coroner.....	Dr. C. J. Finnegan.....	" "
Commissioner 1st Dist.....	Chas. J. Feek.....	" "
Commissioner 2d Dist.....	P. P. Custer.....	" "
Commissioner 3d Dist.....	Anton Nelson.....	" "

JEFFERSON.

Area of county, 2,000 square miles; population in 1900, 5,712; estimated population for 1903, 6,370.

Transportation facilities: Jefferson county has no railroads except local, but is at the entrance of Puget Sound, where all steamers entering the Sound must pass, and there is a daily steamboat service between the county seat and other Sound ports.

The larger part of this county is heavily timbered, and lumbering as a consequence is the most important of its industries. Several new mills have been erected in the past two years. There are some rich agricultural lands, and dairying is one of the growing industries. At Irondale in this county are situated the blast furnaces of the Puget Sound Steel & Iron Company, which is one of the important industries recently established in the state.

There are twenty-two school districts and five towns where graded schools are maintained in this county. The total valuation of school property is \$173,045; total assessed valuation of real property with improvements is \$1,351,251.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules	474	\$ 9,480
Cattle.....	2,088	33,408
Sheep.....	680	1,360
Hogs.....	228	684

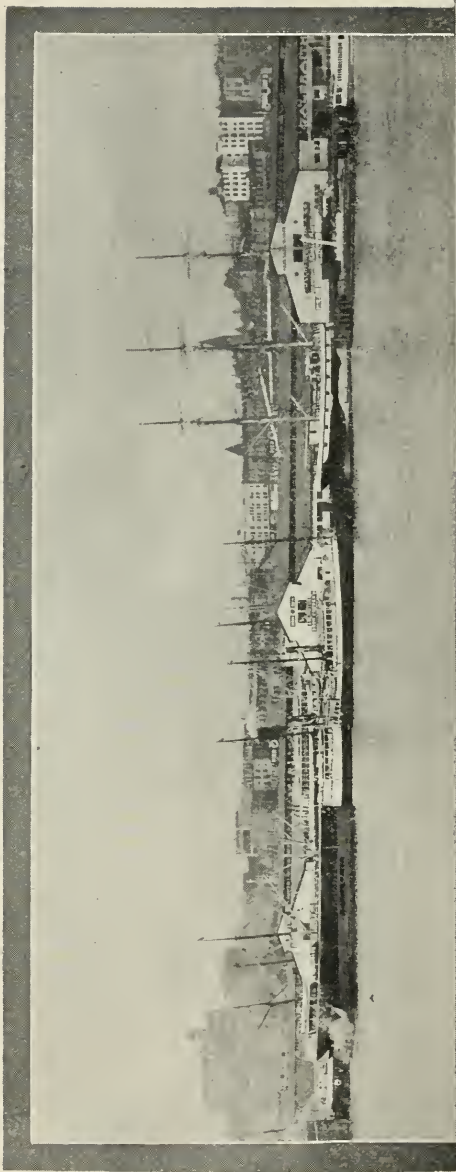
PORT TOWNSEND, the county seat, has a population of 3,443. It is the port of entry for the Puget Sound collection district. The United States marine hospital and quarantine station is also located near this city. The city has various manufacturing plants, electric lights, banks, newspapers, churches and fraternal societies. The city is commanded by Forts Casey, Alger and Worden, all of which are supplied with modern guns of the disappearing type, and designed to protect the entrance to Puget Sound. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	Geo. C. Hatch.....	Port Angeles, Wash.
Auditor.....	J. C. Heath.....	Port Townsend, "
Sheriff.....	C. L. Intermela.....	" " "
Clerk.....	J. W. B. Scott.....	" " "
Treasurer.....	J. H. Peterson.....	" " "
Attorney.....	J. M. Ralston.....	" " "
Assessor.....	C. A. Olson.....	" " "
Supt. of Schools.....	John D. Phillips.....	" " "
Surveyor.....	C. W. Walker.....	" " "
Coroner.....	H. C. Phillips.....	" " "
Commissioner 1st Dist.....	F. W. Hastings.....	" " "
Commissioner 2d Dist.....	Donald Mainland.....	" " "
Commissioner 3d Dist.....	W. J. Worthington.....	" " "

KING.

Area of county, 2,000 square miles; population in 1900, 110,053; estimated population for 1903, 166,900.

Transportation facilities: The N. P. Ry. company with its main line and branches has 192 miles of railway in this county, radiating in nearly every direction from the city of Seattle. The C. & P. S. Ry. Company has 51 miles of road extending into the coal mining and lum-



SEATTLE WATER FRONT AND MORAN BROS. SHIP YARD

ber sections of the county, and the G. N. has forty-six miles trackage within the county. In addition to this, the Canadian Pacific has a trackage arrangement whereby its trains are carried to and from Seattle. The county being bounded on the west by Puget Sound, all manner of water craft is operated, touching at its various ports.

The eastern portion of the county is still heavily timbered, and lumbering is one of its great industries. Within its borders are several valleys which are extremely fertile, and among them are the Snoqualmie, Duwamish and White river valleys, which are particularly well improved, having several thriving towns and villages and numerous productive farms.

Coal mining has been a leading industry in this county for many years, and thousands of tons are exported annually in addition to the local consumption, which is continually on the increase on account of the rapidly growing population of our cities. The output of the mines for the year 1902 was 1,012,217 tons. Large deposits of iron ore are said to exist, and in the Miller river, Money creek and Buena Vista mining districts many ledges have been discovered carrying copper, gold and silver, and in the development of the mining industry no doubt there will be discovered many valuable and paying mines.

Dairying is being continually developed throughout the county, and stock raising, fruit raising and other agricultural pursuits are on the increase.

There are one hundred and forty-six school districts in the county and thirty-three towns where graded schools are maintained. The total valuation of school property is \$1,942,745; total assessed valuation of real property is \$56,276,003, and the total assessed valuation of personal property is \$12,854,238.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	6,776	\$203,280
Cattle.....	15,708	251,238
Sheep.....	3,477	6,954
Hogs.....	1,949	5,847

SEATTLE is the county seat, located on Elliott bay, extending eastward to Lake Washington, and embracing within its borders Lake Union and Green lake. Its population as estimated for 1903 is 121,813.

The city is the location of the State University and also the Ross Academy, the Academy of the Holy Names and other similar institutions. There is also located here a branch of the United States mint, known as the assay office, Fort Lawton, a United States army post, a United States land office, the United States circuit and district court, and it is also a sub-port of entry. The value of the exports from this point for the year ending June 30, 1903, amounted to the sum of \$11,861,713, and the imports for the same period were valued at \$8,293,945, and the customs receipts for the port amounted to \$565,956.38. The United States has provided for the erection of a government building in the city, having appropriated for all purposes the sum of \$950,000.

The daily papers of Seattle, namely: The Post-Intelligencer and the Times, are as ably edited and up-to-date as any of the dailies published in the eastern cities. The city has one hundred miles of street railroad and a million dollar water system, bringing pure mountain water from Cedar river, a distance of thirty-five miles, and has under construction a municipal lighting plant. Its bank deposits aggregate \$29,000,000, and bank clearances for the year 1902 were \$191,885,971.

There are regular lines of steamers plying between the city and China, Japan, Alaska, San Francisco and other coast points and foreign countries, while the "Mosquito fleet," the small boats engaged in the local traffic on Puget Sound and making this their home port, extend into the hundreds.

The city has large wholesale houses and general supply stores of every character and description, and is in every sense distinctly a commercial city. It is, however, not only a commercial city, but has numerous manufacturing establishments, consisting of saw mills, grist mills, breweries, foundries, machine shops and ship building plants, in all of which establishments together with the various trades and benefit, viz: there are employed approximately 15,000 operatives with a pay roll of \$1,000,000 per month, and an output of products amounting to many millions per year. The largest single establishment is the Moran Bros. Company ship yard, where the U. S. Battleship Nebraska is now under construction. This plant employs at the present time about 1,500 men.

This city and other towns of the county are well equipped with good school systems, and Seattle has numerous churches of all denominations, hospitals and other charitable institutions.

BALLARD is a flourishing manufacturing city, situated on Salmon bay adjoining the city limits of Seattle, with a population of 6,942, and to all intents and purposes is a part of the city of Seattle, other than a separate municipal government. The Seattle electric lines run to and from the city, and it has a large number of saw mills, shingle mills, other factories and a ship building plant. It is the largest shingle manufacturing point in the state.

Other important towns in King county are Kent, Auburn, Issaquah, Renton, Enumclaw, Snoqualmie, Bothel, Black Diamond, Fall City, Newcastle, Franklin, Kirkland, Tolt and North Bend. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judges.....	W. R. Bell, Arthur E. Griffin, Boyd J. Tallman, Geo. E. Morris, R. B. Albertson.....	Seattle, Wash.
Auditor.....	Geo. B. Lamping.....	" "
Sheriff.....	Ed Cudihee.....	" "
Clerk.....	C. A. Koepfli.....	" "
Treasurer.....	J. W. McConnaughey.....	" "
Attorney.....	W. T. Scott.....	" "
Assessor.....	John W. Peter.....	" "
Supt. of Schools.....	W. J. Hartranft.....	" "
Surveyor.....	P. F. Wright.....	" "
Coroner.....	Dr. C. E. Hoyer.....	" "
Commissioner 1st Dist.....	Charles Baker.....	" "
Commissioner 2d Dist.....	L. C. Smith.....	" "
Commissioner 3d Dist.....	P. J. Smith.....	" "

KITSAP.

Area of county, 400 square miles; population in 1900, 6,767; estimated population for 1903, 10,131.

Transportation facilities: The county is without railroads, but it is penetrated in different directions by various arms of the Sound, and is reached by all manner of water craft, from the skiff to the ocean liner and sailing vessels.

The principal industry of the county is lumbering, and it has some of the largest saw mills in the state, notably at Port Blakeley and Port Gamble. There are numerous other mills in the county. An important manufacturing industry of the county is the ship building plant and marine railway located on the north side of Eagle Harbor. At this plant large vessels are placed on the ways and hauled out of the water on railways for repairs or alteration as the case may be.

Agriculture, dairying and fruit raising are on the increase, and as the timber is removed and the land cleared, the returns from other lines will be equivalent to the timber. There are valuable oyster beds in Dogfish bay, Port Orchard bay and other places in the county. Puget Sound navy yard, having the largest and nicest dry dock on the Pacific Coast, is located at Bremerton on Port Orchard bay.

There are forty-nine school districts in the county and five towns where graded schools are maintained. The total valuation of school property is \$45,165; total assessed valuation of real property with improvements is \$1,510,248.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	918	\$22,950
Cattle.....	2,548	41,340
Sheep.....	1,120	2,240
Hogs.....	334	1,004

The county seat is Port Orchard (Sidney). It is a flourishing little town, having a population of 630, situated on the south side of Port Orchard bay. It has a weekly newspaper, bank, churches and other societies. Other towns in the county are Port Blakeley, Port Gamble, Port Madison, Bremerton and Charleston. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	John C. Denny.....	Everett, Wash.
Auditor.....	Fred P. Jameson.....	Port Orchard, Wash.
Sheriff.....	Joseph Pitt.....	" " "
Clerk.....	E. F. Jones.....	" " "
Treasurer.....	C. W. Claussen.....	" " "
Attorney.....	J. B. Yakey.....	" " "
Assessor.....	Nathan Bucklin.....	" " "
Supt. of Schools.....	F. D. Newberry.....	" " "
Surveyor.....	A. S. Bates.....	" " "
Coroner.....	C. C. Kellam.....	" " "
Commissioner 1st Dist.....	John Ward.....	" " "
Commissioner 2d Dist.....	Alex D. Smith.....	" " "
Commissioner 3d Dist.....	H. H. Walkinton.....	" " "

KITTITAS.

Area of county, 2,000 square miles; population in 1900, 9,704; estimated population for 1903, 12,480.

Transportation facilities: The N. P. Ry. traverses the county from southeast to northwest, and affords ample facilities for marketing its products.

The Kittitas valley is a rich agricultural and grazing section of the state. The greater portion of the valley is under irrigation, and produces the finest crops of hay and forage of every kind. Fruits of nearly every description do well, and the apples grown in this county are of particularly choice quality. Dairying is one of the principal industries in the county, the natural conditions being peculiarly suitable, there being fine pastures and choice hay for the stock.

A number of promising mining districts in the county are the Swauk, Peshastin, Cle-Elum, Fish lake and Kichelos lake districts. On the eastern slopes of the Cascade mountains there are large tracts of merchantable timber within the borders of this county.

There are forty-three school districts in the county and four towns maintain graded schools. The total valuation of school property is \$100,665; total assessed valuation of real property with improvements is \$2,446,570.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules	4,612	\$115,300
Cattle	18,468	295,488
Sheep	50,646	101,292
Hogs	2,534	7,602

ELLENSBURG is the county seat and is a division point on the N. P. R'y line. It is a thriving town having a population of 2,894, and is the location of one of the state normal schools. It has a good system of schools, banks, newspapers, churches and numerous civic societies. Other towns in the county are Cle-Elum, having a population of 1,361, and Roslyn with a population of 2,800. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	Frank H. Rudkin.....	North Yakima, Wash.
Auditor.....	H. M. Baldwin.....	Ellensburg, Wash.
Sheriff.....	Robert L. Thomas.....	" "
Clerk.....	A. E. Emerson.....	" "
Treasurer.....	R. Lee Purdin.....	" "
Attorney.....	C. V. Warner.....	" "
Assessor.....	W. M. Kenney.....	" "
Supt. of Schools.....	H. F. Blair.....	" "
Surveyor.....	M. M. Emerson.....	" "
Coroner.....	H. J. Felch.....	" "
Commissioner 1st Dist.....	J. E. Burke.....	" "
Commissioner 2d Dist.....	W. E. Crowley.....	" "
Commissioner 3d Dist.....	Edgar Pease.....	" "

KLICKITAT.

Area of county, about 1,800 square miles; population in 1900, 6,407; estimated population for 1903, 8,788.

Transportation facilities: It has a railroad from Lyle, on the Columbia river, to Goldendale, a distance of about forty miles. The O. R. & N. Ry. is reached by crossing the Columbia river at Lyle to the Oregon side.

The northern and western portions of the county are somewhat mountainous and covered with timber, and lumbering is an important

industry. A large portion of the county is susceptible to cultivation, and there are large areas of good grazing lands. The principal crops of the county are wheat, oats and barley. There is some dairying in the county, and the raising of live stock is an important industry. Apples, prunes, plums, pears and other fruits grow in abundance, and along the Columbia river peaches, apricots and grapes are grown to perfection.

There are seventy-five school districts in the county and five towns where graded schools are maintained. The total valuation of school property is \$33,229; the total assessed valuation of real property with improvements is \$2,065,658.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	6,238	\$124,760
Cattle.....	12,997	207,952
Sheep.....	93,765	187,530
Hogs.....	4,049	12,147

GOLDENDALE is the county seat, situated on the Little Klickitat river. Its population is 1,690. It has banks, newspapers, churches, a good school system, a private academy and a number of fraternal societies. The county officers are:

<i>Office Held.</i>	<i>Name of Office.</i>	<i>Residence.</i>
Superior Judge.....	A. L. Miller.....	Vancouver, Wash.
Auditor.....	J. H. Smith.....	Goldendale, "
Sheriff.....	Wm. Van Vactor.....	" "
Clerk.....	Amos E. Coley.....	" "
Treasurer.....	T. B. Montgomery.....	" "
Attorney.....	E. C. Ward.....	" "
Assessor.....	Chas. F. Kayser.....	" "
Supt. of Schools.....	Emma C. Clanton.....	" "
Surveyor.....	A. L. Richardson.....	" "
Coroner.....	Frank Sanders.....	" "
Commissioner 1st Dist.....	B. C. Dymond.....	" "
Commissioner 2d Dist.....	W. E. Hornibrook.....	" "
Commissioner 3d Dist.....	.....	" "

LEWIS.

Area of county, 2,000 square miles; population in 1900, 15,157; estimated population for 1903, 21,626.

Transportation facilities: The N. P. Ry. traverses the county from north to south, and the Grays Harbor and South Bend branches extend westerly through the county from Centralia and Chehalis respectively.

Lumbering is the principal industry of the county, there having been erected within the past three years some fifteen saw mills and a number of shingle mills. The Chehalis river valley spreads over the central and western, and the Cowlitz valley over the southern and eastern parts of the county, making a large area of fertile lands well adapted to agriculture.

Some wheat is grown in this county in addition to abundant crops of oats, hops, hay, potatoes and other vegetables. Horticulture is a growing industry, there being many orchards producing fine varieties of apples, prunes, cherries and small fruits. There is said to exist fine veins of coal in the eastern part of the county, which as yet are unde-

veloped. Dairying is an important industry in the county, and there is a condensed milk factory located at Chehalis, which consumes the milk produced by 400 cows.

There are 111 school districts in the county and eleven towns where graded schools are maintained. The total valuation of school property is \$126,171; the total assessed value of real property, including improvements, is \$4,723,222.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	3,363	\$ 94,075
Cattle.....	16,217	259,472
Sheep.....	5,564	11,128
Hogs.....	7,182	21,546

CHEHALIS is the county seat, situated on the main line of the N. P. R'y. It is a thriving town, with schools, banks, newspapers, churches and numerous civic societies; it is also the location of the state reform school. Its estimated population is 2,548. Centralia is another important town in the county, having a number of sawmills and surrounded by a good country. It is well supplied with banks, newspapers, churches, etc., and has an estimated population of 3,626. Other towns in the county are Winlock, Pe Ell and Toledo. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	A. E. Rice.....	Centralia, Wash.
Auditor.....	Albert Schooley.....	Chehalis, "
Sheriff.....	Henry Urquhart.....	" "
Clerk.....	B. H. Rhodes.....	" "
Treasurer.....	S. E. Grimm.....	" "
Attorney.....	M. A. Langhorne.....	" "
Assessor.....	Peter Summersett.....	" "
Supt. of Schools.....	R. E. Bennett.....	" "
Surveyor.....	C. W. Geiger.....	" "
Coroner.....	J. L. Meyer.....	" "
Commissioner 1st Dist.....	A. S. Sears.....	" "
Commissioner 2d Dist.....	Henry Foster.....	" "
Commissioner 3d Dist.....	W. A. H. Berley.....	" "

LINCOLN.

Area of county, 2,300 square miles; population in 1900, 11,969; estimated population for 1903, 18,571.

Transportation facilities: The county is traversed from east to west by the G. N. and N. P. Rys., so located as to afford the best of transportation facilities for the produce of the county.

The surface of this county is rolling prairie, and farming is the principal industry. There has been a remarkable increase in the county in the amount of cultivated land, there being now 435,000 acres, or more than double the amount cultivated in 1900. This county is located in the great wheat growing belt, and it is a question as to whether Whitman or Lincoln county should hold supremacy as the greatest wheat producing county in the world.

Dairying is one of the important industries of the county, and with the progress now being made in the development of forage grasses, we have no doubt that the live stock industry will become a great factor in increasing the wealth in this county. Splendid crops of corn, oats, barley and grain are here grown, as well as vegetables, apples and the

hardier fruits. The milling industry is assuming considerable importance, several flouring mills being located at different places in the county and having a combined capacity of several thousand barrels per day.

There are 129 school districts in the county and eleven towns where graded schools are maintained. The total valuation of school property is \$154,244; the total assessed valuation of real property, including improvements, is \$6,910,914; personal property, \$2,399,981.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules	18,414	\$460,550
Cattle.....	20,310	324,960
Sheep.....	1,174	2,348
Hogs.....	6,480	19,440

DAVENPORT is the county seat, located on the N. P. Ry. Its estimated population is 1,729. SPRAGUE with an estimated population of 1,305; Wilbur with an estimated population of 1,193; Harrington with an estimated population of 707, and Creston with an estimated population of 497, are other towns and trading points of more or less importance in the county. Most of these towns have banks and churches, some have newspapers and all are supplied with good schools. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	C. H. Neal	Davenport, Wash.
Auditor.....	A. S. Brown.....	" "
Sheriff.....	J. J. Inkster.....	" "
Clerk.....	W. W. Downey.....	" "
Treasurer.....	S. J. Minnick.....	" "
Attorney.....	R. M. Dye.....	" "
Assessor.....	S. G. Noble	" "
Supt. of Schools.....	Alice Neal.....	" "
Surveyor.....	Geo. R. Sawyer.....	" "
Coroner.....	F. N. Freer.....	" "
Commissioner 1st Dist.....	Chas. E. Kellum.....	" "
Commissioner 2d Dist.....	J. R. Davidson.....	" "
Commissioner 3d Dist.....	John P. Martin.....	" "

MASON.

Area of county, 900 square miles: population in 1900, 3,810; estimated population for 1903, 4,268.

Transportation facilities: Steamers ply between Shelton and other ports on Puget Sound, and there are a number of local and logging railways from Shelton, the county seat.

The principal industry of the county is lumbering, logging operations being carried on extensively. Another important industry of value to the county is the oyster, there being large areas of tide lands on its shores and inlets well adapted to oyster culture. The various kinds of fruit grown in the Puget Sound section of the state are produced in this county. In the valleys some good lands are being opened up to agriculture.

There are forty-two school districts in the county and one graded school. The assessed valuation of school property is \$26,324; the total assessed valuation of real property with improvements is \$1,244,992.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules	295	\$ 5,900
Cattle.....	1,239	19,824
Sheep.....	449	898
Hogs.....	122	366

SHELTON is the county seat, located on an inlet of Puget Sound, twenty-two miles northwest of Olympia. It has an estimated population of 1,064; it has churches and graded schools, a bank, electric light plant and two newspapers. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	Mason Irwin.....	Montesano, Wash.
Auditor.....	Geo. O. Huntley.....	Shelton, "
Sheriff.....	James Forrest.....	" "
Clerk.....	Eli B. Robinson.....	" "
Treasurer.....	T. M. McDonald.....	" "
Attorney.....	T. P. Fisk.....	" "
Assessor.....	Frank C. Willey.....	" "
Supt. of Schools.....	Mrs. Mary F. Knight.....	" "
Surveyor.....	G. M. Ward.....	" "
Coroner.....	A. F. Chapman.....	" "
Commissioner 1st Dist.....	Jacob Hauptley.....	" "
Commissioner 2d Dist.....	T. W. Daniels.....	" "
Commissioner 3d Dist.....	W. S. Taylor.....	" "

OKANOGAN.

Area of county, 4,300 square miles; population in 1900, 4,689; estimated population for 1903, 7,660.

Transportation facilities: The only means of reaching this county is by boat on the Columbia river from Wenatchee, or by stage. It is probable that the G. N. Ry. Company will build a line through this county connecting its main line at Wenatchee with its branch at Republic, Ferry county. This line will give the county greatly improved facilities.

The surface of the county is rolling grass lands, and large numbers of stock pasture on its ranges. There are a number of rich valleys and bench lands that are very productive and produce fine crops of grain, fruit and vegetables.

There are valuable mining deposits located at numerous places in the county under various stages of development, and beyond doubt with improved transportation facilities a number of paying mines will be developed. Coal has been discovered in the county, and with the development of its vast natural resources, it is destined to become an exceedingly rich section of the state.

There are forty-eight school districts in the county and two towns where graded schools are maintained. The assessed valuation of school property is \$30,145; the total assessed valuation of real property, including improvements, is \$304,518.

<i>Live Stock.</i>	<i>No.</i>	<i>Value</i>
Horses and mules.....	6,942	\$138,840
Cattle.....	16,411	262,576
Sheep.....	28,770	57,540
Hogs.....	1,725	5,175

CONCONULLY is the county seat, situated in the northern portion of the county about 100 miles north of Wenatchee. It is a small town



Nellie Guinne, No. 20191.

Laurie, No. 18484.

RED POLLED HEIFERS.



IMPORTED MAYGOLD, No. 7356, RED POLLED BULL.
Owned by R. O. Dunbar & Son, Olympia, Wash.

having a saw mill and concentrator. Other towns in the county are Brewster and Loomis. The county officers are :

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	C. Victor Martin	Wenatchee, Wash.
Auditor.....	Henry Carr	Conconully, ..
Sheriff	G. W. Tindall.....	" ..
Clerk.....	Eugene F. Wehe.....	" ..
Treasurer.....	John M. Pitman.....	" ..
Attorney.....	E. K. Pendergast.....	" ..
Assessor.....	F. M. Wilmarth	" ..
Supt. of Schools.....	W. E. Gamble	" ..
Surveyor.....	George S. Gardiner.....	" ..
Coroner.....	D. J. E. Goggins.....	" ..
Commissioner 1st Dist.....	A. George Wehe.....	" ..
Commissioner 2d Dist.....	Robt. Prewitt.....	" ..
Commissioner 3d Dist.....	Fred Rosenfelt.....	" ..

PACIFIC.

Area of county, 900 square miles; population in 1900, 5,983; estimated population for 1903, 7,544.

Transportation facilities: A branch of the N. P. Ry. extends from the county seat to the main line at Chehalis, and various kinds of shipping is done between Willapa harbor and all points on the coast.

The agricultural interests are somewhat developed in the county, and considerable crops of vegetables and farm produce are raised. Dairying is carried on to some extent as well as hop culture, fruit raising and kindred pursuits. In this county many hundreds of acres of tide lands have been reclaimed, all of which produce large crops of hay and oats, and on the peninsula a number of cranberry marshes are being cultivated with satisfactory results. Oyster culture is another important industry, giving employment to several hundred men and being a source of large revenue to the parties interested in the business. Lumbering and the fisheries in its various branches are the principal industries of the county.

There are fifty-four school districts in the county and seven towns where graded schools are maintained. The assessed valuation of school property is \$60,749; the total assessed valuation of real property with improvements is \$2,043,857.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	515	\$10,300
Cattle.....	4,108	65,728
Sheep.....	610	1,220
Hogs.....	214	642

SOUTH BEND is the county seat, ten miles from the Pacific ocean at the mouth of the Willapa river. It has banks, churches, newspapers, several sawmills and a good school system. Its estimated population is 1,555. Other towns in the county are Ilwaco, Oysterville and Willapa. The county officers are :

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	A. E. Rice.....	Centralia, Wash.
Auditor.....	A. P. Leonard	South Bend, ..
Sheriff	Thomas Roney	" ..
Clerk.....	Earnest Seaborg.....	" ..
Treasurer.....	H. J. Hubler.....	" ..
Attorney.....	H. W. B. Hewen.....	" ..
Assessor.....	Wm. N. Ackers.....	" ..
Supt. of Schools.....	C. A. Murdock.....	" ..

Surveyor.....	T. M. Gunn.....	"	"	"
Coroner.....	Josh H. Gold.....	"	"	"
Commissioner 1st Dist.....	W. R. Marion.....	"	"	"
Commissioner 2d Dist.....	C. H. Callender.....	"	"	"
Commissioner 3d Dist.....	W. R. Gray.....	"	"	"

PIERCE.

Area of county, 1,800 square miles; population in 1900, 55,515; estimated population for 1903, 77,704.

Transportation facilities: The N. P. Ry. with its main line and branches has 121 miles of road in this county, radiating in nearly every direction from Tacoma, which is the coast terminus. The T. & E. Ry. has twenty-nine miles of track, extending in a southeasterly direction from Tacoma towards the base of Mt. Rainier, and in addition to this there are several miles of electric railway. These lines of railroad extend into the coal mining and other sections of the county, and every kind of water craft, from the mammoth ocean vessel to the launch, ply between Tacoma and the ports of Puget Sound and the world.

There are large tracts of heavily timbered land remaining in the county, and lumbering is one of its greatest industries. It has a number of fine valleys with rich soil, the most noted of which is Puyallup, which is well improved and contains a number of thriving towns and the most productive farms. In this valley, particularly in the vicinity of Puyallup and Sumner, the fruit industry has been highly developed as is elsewhere stated in this book.

Coal mining has been for years one of the leading industries of the county, thousands of tons being annually exported in addition to the local consumption, which is increasing rapidly with the growth of our cities. The output of the mines for the year 1902 was ——— tons. There are said to be fine deposits of copper, gold, silver and other minerals in the Carbonado, Mashel and other mining districts of the county, which with development we believe will in the future prove to be valuable and paying mines. Dairying also is an important industry in the county.

There are 100 school districts in the county and nineteen towns where graded schools are maintained. The total assessed valuation of school property is \$1,147,311; the total assessed valuation of real property, including improvements, is \$23,176,711; total assessed valuation of personal property, \$4,932,105.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	5,217	\$106,510
Cattle.....	13,407	214,448
Sheep.....	1,810	3,620
Hogs.....	2,172	6,516

TACOMA is the county seat, located on Commencement bay, one of the leading harbors of Puget Sound. Its population as estimated for 1903 is 52,799. As heretofore stated it is the terminus of the N. P. Ry., which has expended several million dollars in terminal improvements, and has its principal western shops located here and employs several hundred men with a monthly pay roll amounting to approximately

\$100,000 per month. The United States District and Circuit Court, southern division, District of Washington, is located here. It is also a sub-port of entry and the largest wheat shipping port in the state, having exported during the year 1902 11,829,093 bushels of wheat and 1,351,224 barrels of flour. The exports from this port for the year ending June 30, 1903, amounted to \$15,633,138, and the imports for the same period were valued at \$2,527,974, and the customs receipts for this sub-port amounted to \$360,303.90.

The United States government has provided for the erection of a government building in the city of Tacoma, having appropriated for the purpose the sum of \$500,000, also a large sum for improving its harbor. There are several state institutions located in the county, namely: The Western Hospital for the Insane at Steilacoom, the Washington Soldiers' Home at Orting and several educational institutions, among which are Whitworth College, Presbyterian, and the Puget Sound University, Methodist, in which regular academic and collegiate courses are prescribed, and the Annie Wright Seminary, a boarding school for girls, all in Tacoma.

The city is well provided with daily papers, the Ledger and News being up-to-date. It has many miles of street railways, large saw mills, grist mills, machine shops, foundries and a smelter; it has several banks with deposits aggregating \$8,000,000, and bank clearances for the year 1902 were \$75,749,763, and for the year 1903 will probably reach the \$100,000,000 mark. There are regular lines of steamers plying between the city and China, Japan, Alaska, San Francisco and other coast points and foreign countries. It also has a large mosquito fleet engaged in the local traffic on Puget Sound, making this their home port.

The city has large wholesale houses and general supply stores, and is a strong rival, from a commercial standpoint, of all the cities in the northwest, and in the various manufacturing establishments in this city and on the transportation lines and in the trades there are employed several thousand men with a monthly pay roll extending into the hundreds of thousands.

This city and other towns of the county are well supplied with churches, hospitals, libraries, charitable institutions and good school systems. There are several other flourishing cities in this county, among which are Puyallup, Sumner, Orting, Buckley, Steilacoom and several coal mining towns. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judges.....	W. H. Snell, Thad Huston,	Tacoma, Wash.
	J. O. Chapman.....	" "
Auditor.....	J. H. Davis.....	" "
Sheriff.....	Jas. A. Denholm.....	" "
Clerk.....	A. M. Banks.....	" "
Treasurer.....	John B. Reed.....	" "
Attorney.....	Fremont Campbell.....	" "
Assessor.....	Ed Meath.....	" "
Supt. of Schools.....	Lee L. Benbow.....	" "
Surveyor.....	George Thornton.....	" "
Coroner.....	Dr. E. M. Brown.....	" "
Commissioner 1st Dist.....	Fred M. Mead.....	" "
Commissioner 2d Dist.....	Geo. B. Kandle.....	" "
Commissioner 3d Dist.....	H. Winchester.....	" "

SAN JUAN.

Area of county, 500 square miles; population in 1900, 2,928; estimated population for 1903, 3,395.

This county is composed entirely of islands, and its only transportation facility is by steamer or other water craft. The principal islands are San Juan, Orcas, Lopez, Stewart, Johns and Decatur. There are many smaller islands.

These islands are well adapted to grazing, and some portions are good agricultural land. There is much less rainfall here than in other sections of Western Washington. Dairying is a profitable industry, and fruits of all kinds, particularly apples, pears, cherries, plums and berries grow well and yield abundant crops. Lime rock of fine quality is found in abundant quantities, and the Roche Harbor Lime Works is one of the most important industries of the county.

There are twenty-seven school districts in the county and two towns where graded schools are maintained. The total valuation of school property is \$21,280; total assessed valuation of real property with improvements, \$539,102.

<i>Live Stock.</i>	<i>No.</i>	<i>Stock.</i>
Horses and mules.....	752	\$22,560
Cattle.....	2,290	36,640
Sheep.....	8,343	16,686
Hogs.....	471	1,413

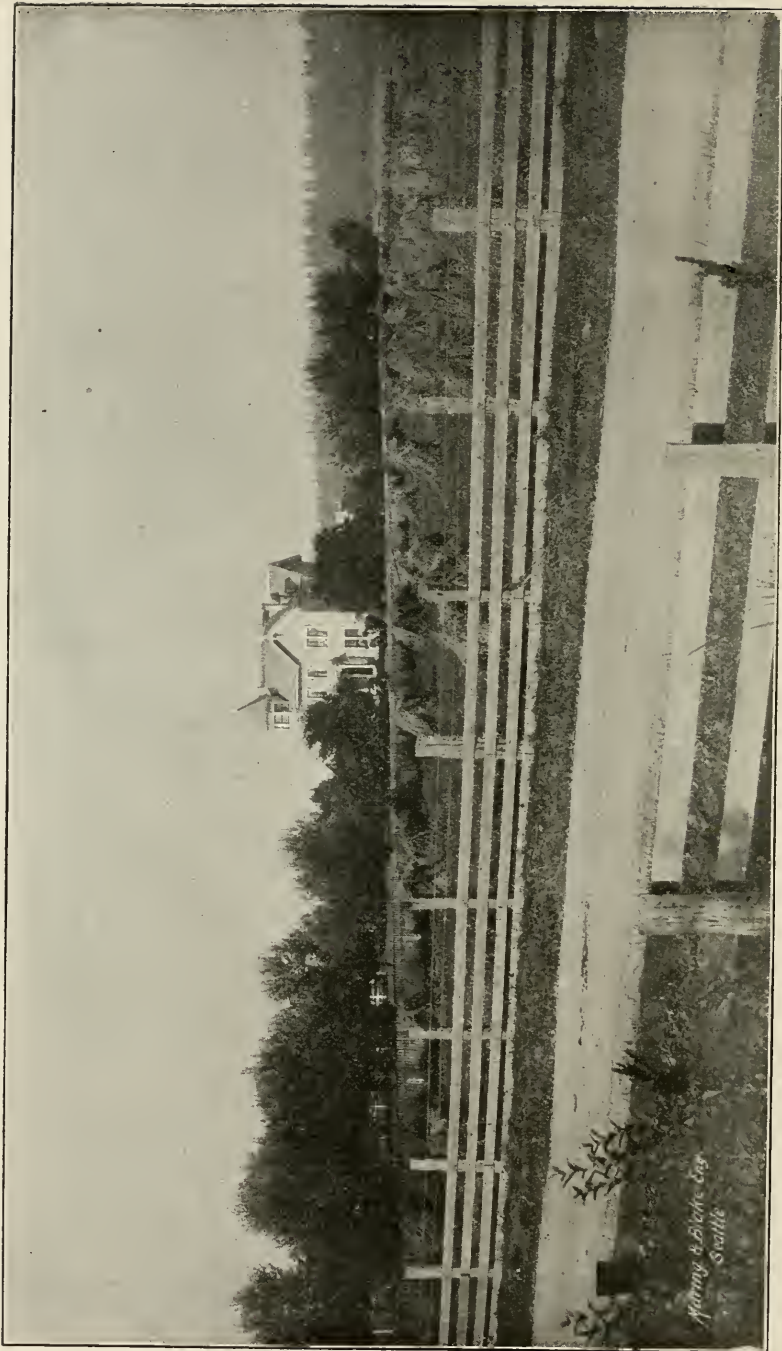
FRIDAY HARBOR is the county seat, situated on San Juan island. It has a newspaper, schools and churches, and its population is about 400. There are various other towns and trading points on the islands, among which are Argyle, Decatur, Orcas, Roche Harbor and Werner. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	Geo. A. Joiner.....	Mt. Vernon, Wash.
Auditor.....	Fred E. Kirby.....	Friday Harbor, Wash.
Sheriff.....	William H. McCrary.....	" " "
Clerk.....	Lars C. Larsen.....	" " "
Treasurer.....	Clarence M. Tucker.....	" " "
Attorney.....	Hawley S. King.....	" " "
Assessors.....	William J. Court.....	" " "
Supt. of Schools.....	Mary M. Buxton.....	" " "
Surveyor.....	Anselm P. Vaughn.....	" " "
Coroner.....	Geo. S. Wright.....	" " "
Commissioner 1st Dist.....	Isaac Sandwith.....	" " "
Commissioner 2d Dist.....	Peter Bostian.....	" " "
Commissioner 3d Dist.....	William Graham.....	" " "

SKAGIT.

Area of county, 1,800 square miles: population in 1900, 14,272; estimated population for 1903, 20,744.

Transportation facilities: The G. N. and N. P. Rys. traverse the county from north to south, and the S. & N., a branch of the G. N., traverses the county from Anacortes on the Sound to Sauk on the Skagit river, a distance of fifty-four miles, and these roads, together with the Skagit river and the Sound, afford this county the best of facilities for marketing its products.



A WESTERN WASHINGTON FARM
Home of Hon. H. S. Conner, LaConner, Wash

*Murray & Bichey Eng
Seattle*

There are large tracts of fine timber in this county, and lumbering, as in all sections of Western Washington, is one of the important industries. Agriculture is the most important of all its industries. In that part of the county known as the Swinomish, Samish and Skagit flats there is a tract some fifteen miles wide and thirty miles long, generally diked in, which forms the most productive section in the state. Here is found splendid farms highly improved, with fine buildings, good roads and fine live stock. In the production of oats Skagit county excels all other counties in the state, and we doubt not any other territory of equal size in the world, producing annually over a million and a half bushels. In addition to this, it is noted for its large crops of hay and other farm produce. Hops, vegetables and fruits of all kinds flourish, and the soil is well adapted to flax culture. There are several creameries in the county, and the dairying business is growing and becoming of importance as a local industry.

There are valuable coal mines somewhat developed and from which it is said a first-class quality of coke is made; also in the eastern part of the county are found extensive deposits of iron ore, believed to be of fine quality, as well as fire clay, asbestos, talc and numerous ledges bearing gold, silver and lead, many of which no doubt will develop into valuable and paying mines.

There are seventy-five school districts in the county and fifteen towns where graded schools are maintained. The total valuation of school property is \$187,373; total assessed valuation of real property with improvements, \$4,652,608. Personal property, \$1,240,688.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	3,139	\$ 94,170
Cattle.....	9,011	144,176
Sheep.....	3,951	7,902
Hogs.....	1,741	5,223

MT. VERNON is the county seat, located on the Skagit river and the G. N. Ry. It has an estimated population of 1,893. La Conner is the oldest town in the county, situated on Swinomish Slough and having an estimated population of 643. Anacortes, located on Fidalgo island and tide water, is the center of the fishing industry and has a population of 2,191. Sedro-Woolley, situated at the junction of the N. P. and S. & N. Rys., is an important shipping point and the largest town in the county, having an estimated population of 2,684. Other towns of more or less importance in the county are Burlington, Hamilton, McMurray and Edison. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	Geo. A. Joiner.....	Mt. Vernon, Wash.
Auditor.....	Fred L. Blumberg.....	" "
Sheriff.....	C. A. Risbell.....	" "
Clerk.....	W. B. Davis.....	" "
Treasurer.....	R. O. Welts.....	" "
Attorney.....	J. C. Waugh.....	" "
Assessor.....	F. F. Willard.....	" "
Supt. of Schools.....	J. Guy Lowman.....	" "
Surveyor.....	Henry Gay.....	" "
Coroner.....	B. R. Sumner.....	" "
Commissioner 1st Dist.....	Nick Bessner.....	" "
Commissioner 3d Dist.....	W. J. Henry.....	" "
Commissioner 3d Dist.....	Geo. A. Hanson.....	" "

SKAMANIA.

Area of county, 1,600 square miles; population in 1900, 1,688; estimated population for 1903, 1,704.

Transportation facilities: This county has no railroad but borders on the Columbia river, upon which a line of steamers are regularly operated, and the O. R. & N. Ry. extends along the river on the Oregon side.

The county is generally mountainous and has large bodies of timber, and consequently lumbering is carried on to a considerable extent. There is some good tillable land bordering the Columbia river, which under cultivation yields good crops. The Bald mountain and St. Helens mining districts situated in the northern part of the county, discoveries of the precious metals have been made, but as yet are undeveloped.

There are eighteen school districts in the county, and the total valuation of school property is \$4,886. Total assessed valuation of real property with improvements is \$408,294.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	353	\$ 9,825
Cattle.....	1,440	23,040
Sheep.....	349	698
Hogs.....	138	414

STEVENSON is the county seat, situated on the Columbia river, and has a population of 338. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	A. L. Miller.....	Vancouver, Wash.
Auditor.....	Albert Fleischauer.....	Stevenson, "
Sheriff.....	J. T. Totten.....	" "
Clerk.....	Albert Fleischauer.....	" "
Treasurer.....	J. A. Fisher.....	" "
Attorney.....	".....	" "
Assessor.....	E. O. Williams.....	" "
Supt. of Schools.....	Mrs. Lillie Miller.....	" "
Surveyor.....	E. O. Williams.....	" "
Coroner.....	".....	" "
Commissioner 1st Dist.....	George Breslin.....	" "
Commissioner 2d Dist.....	Ed Hollis.....	" "
Commissioner 3d Dist.....	J. M. Coulter.....	" "

SNOHOMISH.

Area of county, 2,500 square miles; population in 1900, 23,950; estimated population for 1903, 45,102.

Transportation facilities: The county is traversed from east to west and north to south by the G. N., and also from north to south by the N. P., which has several branch lines traversing the county in different directions, the mileage of both roads aggregating 213 miles in the county, and in addition to this, every kind of water craft sailing from its ports on the Sound.

Snohomish county has had a most remarkable growth in the past three years, the estimated increase in population being 88.6 per cent. There are many thousands of acres of valuable timber land still untouched in the county, and the lumbering industry is its greatest resource at the present time.

The valleys of the Stillaguamish, Snohomish, Skykomish and other streams are exceedingly fertile, and many of the finest farms in the state are to be found in this county. On these farms are produced splendid crops of oats, hay, hops and vegetables, and fruit growing is an important adjunct to the other agricultural interests. With the development of the farming interests, stock raising is becoming of more importance, and the dairying industry is increasing rapidly with the demand for its products.

Snohomish county embraces within its borders the White Horse, or Darrington, the Monte Cristo, Silverton, Sultan Basin, Silver Creek and Index mining districts, and more money has been expended in developing its mining resources than in any other county of the state. The development of the Monte Cristo district is familiar history. The Ethel mine in the Index district has a large mill and concentrator in operation, as has also the Copper Independent at Silverton. Among the other valuable mines of the county may be mentioned the Sunset and the Copper Queen of Index, the Bonanza Queen at Silverton, upon which it is alleged \$200,000 has been expended, the forty-five in the Sultan Basin, and the Bluebird at Darrington. There are many other mining prospects and claims that with development will no doubt be equally as good as those mentioned.

There are eighty-seven school districts in the county and sixteen towns where graded schools are maintained. The total valuation of school property is \$372,816; total assessed valuation of real property, including improvements, \$7,467,777; personal property, \$2,237,156.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules	3,847	\$115,410
Cattle	11,858	189,728
Sheep	2,829	5,658
Hogs.....	1,487	4,461

EVERETT is the county seat, located on Port Gardner bay near the mouth of the Snohomish river. It has a population, according to the estimate of this bureau, of 20,138, being an increase of 169.68 per cent in three years. If the town of Lowell and the smelter, which are industrial suburbs and legitimately a part of the city, were attached as they should be, the city would probably have a population of 22,000.

This city is a sub-port of entry. It has a smelter, an account of which is elsewhere found in this book, a large paper mill, foundries and machine shops, numerous large saw mills, a ship building plant, a grist mill and sundry other manufacturing establishments, and it is in every sense a manufacturing city. Its harbor is being improved by the government, it being on the continuous appropriation list by act of congress. The city has two daily papers, several banks, a hospital, numerous churches and a good school system.

Snohomish is the next important town in the county, situated eight miles above Everett on the Snohomish river. It is the former county seat, is surrounded by a rich agricultural community, has several saw and shingle mills, a newspaper, banks, churches and a good school sys-

tem. Here also is situated the Puget Sound Academy, an important educational institution for the community. Its population as estimated for 1903 is 3,941.

Other towns and trading points in the county worthy of mention are Arlington, Monroe, Edmonds, Marysville, Stanwood, Silvana, Darrington, Silverton, Machias, Hartford, Maltby, Sultan and Index. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	John C. Denny.....	Everett, Wash.
Auditor.....	W. M. Ross.....	" "
Sheriff.....	Frank P. Brewer.....	" "
Clerk.....	George W. Adamson.....	" "
Treasurer.....	Charles L. Lawry.....	" "
Attorney.....	H. D. Cooley.....	" "
Assessor.....	E. M. Allen.....	" "
Supt. of Schools.....	T. A. Stiger.....	" "
Surveyor.....	J. F. Birney.....	" "
Coroner.....	Charles H. Bakeman.....	Snohomish,
Commissioner 1st Dist.....	S. G. Buell.....	
Commissioner 2d Dist.....	T. C. Fleming.....	
Commissioner 3d Dist.....	J. F. Stretch.....	

SPOKANE.

Area of county about 1,680 square miles; population in 1900, 57,542; estimated population for 1903, 74,804.

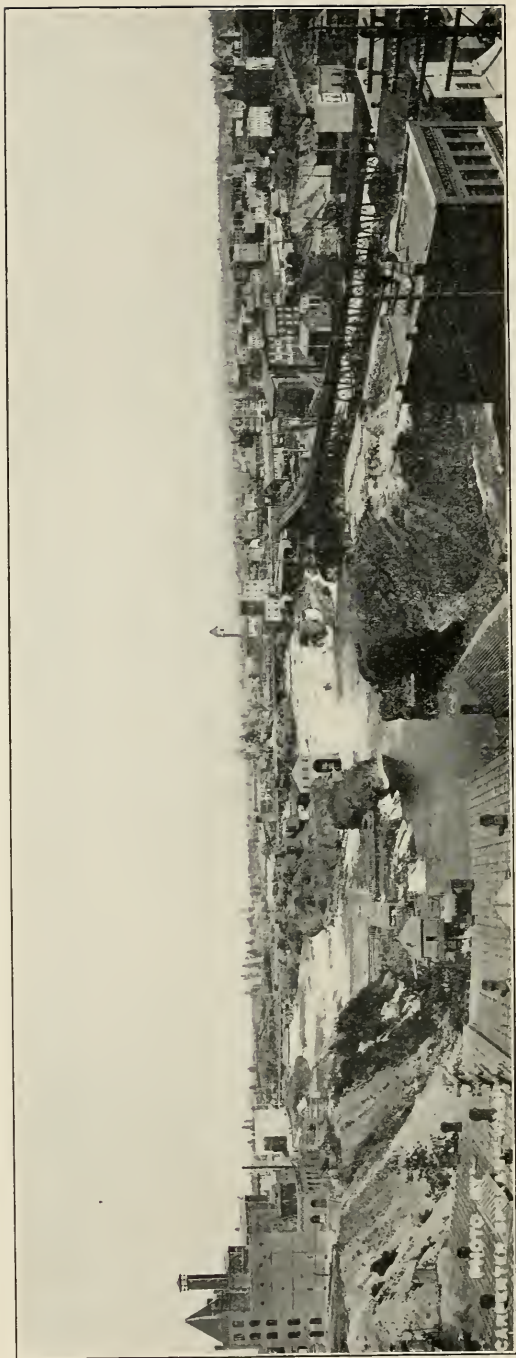
Transportation facilities: The N. P. and G. N. Rys. traverse the county from east to west, and a branch of the O. R. & N. Ry. has its terminus at Spokane, the county seat. The S. & N., the S. & P. and other branches of these different railroads radiate from the county seat, traversing the county in every direction, there being a total railway mileage in the county of 241.16 miles.

The northern portion of the county is somewhat mountainous and is covered with a growth of pine and tamarack timber, and much of it is well adapted to grazing. The central part of the county is traversed by the Spokane river, and the southern portion is well adapted to agriculture, large areas being devoted to wheat raising. Horticulture is an important industry, many thousands of acres being planted to orchards, and the apples here grown are said to be of the finest quality and flavor. All the ordinary fruits are grown. East of Spokane falls, on what is known as the Spokane prairie, the Spokane Land & Water Company have an irrigation system, several thousand acres being now under irrigation. Lumbering is a considerable industry in the county, and the flour mills of the county have a combined capacity of 2,800 barrels daily.

There are 153 school districts in the county and eighteen towns where graded schools are maintained. The total valuation of school property is \$1,166,562; total assessed valuation of real property, with improvements, \$23,287,154; personal property, \$6,674,916.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	12,844	\$321,100
Cattle.....	20,732	331,712
Sheep.....	1,221	2,442
Hogs.....	7,607	22,821

SPOKANE is the county seat and is the third largest city in the state, having an estimated population for 1903 of 47,902. It is the center of



MIDDLE FALLS AND MANUFACTURING DISTRICT,
Spokane, Wash.

the great wheat raising section and the principal mining and commercial city between the Cascades and the Rocky mountains. It is situated on the Spokane river at the falls, which are capable of producing an enormous power for all purposes, which power is now used for operating the street railway cars, electric light plant and many industrial and manufacturing plants. The city is well supplied with a splendid water system, has a large number of saw mills, flouring mills, machine shops, foundries and other manufacturing establishments. It has large wholesale houses and is the principal commercial city of Eastern Washington. It is the location of the United States Circuit and District Court, eastern division, has a United States land office and a military post.

There are several educational institutions located in the city of Spokane, among which are Gonzaga College, St. Stephens School for Boys and Brunet Hall, a seminary for girls. It has large daily newspapers, numerous banks, churches, hospitals and schools.

Other towns in the county worthy of mention are Cheney, having an estimated population of 1,005 and being the location of the Eastern Washington Normal School, and Medical Lake, having a population of 714, and being the location of the Eastern Washington Hospital for the Insane. This town obtains its name from the peculiar properties of the water there. The county officers are :

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judges.....	Wm. E. Richardson, Geo. W. Belt, Henry L. Kennan.....	Spokane, Wash.
Auditor.....	Zachariah Stewart.....	" "
Sheriff.....	William J. Doust.....	" "
Clerk.....	Edward McErwin.....	" "
Treasurer.....	George Mudgett.....	" "
Attorney.....	Horace Kimball.....	" "
Assessor.....	Dayton H. Stewart.....	" "
Supt. of Schools.....	Marshall B. Watkins.....	" "
Surveyor.....	Joseph M. Snow.....	" "
Coroner.....	D. Lawrence Smith.....	" "
Commissioner 1st Dist.....	George H. Collin.....	
Commissioner 2d Dist.....	J. N. Butler.....	
Commissioner 3d Dist.....	William M. Dean.....	

STEVENS.

Area of county, 3,800 square miles; population in 1900, 10,543; estimated population for 1903, 15,790.

Transportation facilities: The S. F. & N. Ry., a branch of the G. N., traverses the county from north to south, affording easy transportation facilities and direct communication with Spokane.

The topography of the county is generally hilly, some parts of it mountainous. There are considerable bodies of pine, fir, spruce, cedar and other kinds of timber, and lumbering constitutes one of the leading industries of the county. There are many rich valleys dotted with numerous good farms, well stocked with horses and cattle, and producing splendid crops. The Kalispell valley, Pend d'Oreille and Colville are particularly noted as profitable agricultural sections. The finest of fruits can be grown, particularly winter apples, and that is becoming an important industry in this section of the state.

In this county are found the Metalline and other mining districts, and of the ores there found are galena, hematite, gold and silver. A smelter is located at Northport. The county abounds in rich quarries of marble, onyx, limestone and superior building stone. Fire clay is found and a large plant has been established at Clayton for the purpose of manufacturing this clay into marketable products. There are also extensive lime kilns; there are a number of creameries and cheese factories in the county, and the dairying interest is becoming more developed and is destined to be one of the leading industries in the county.

There are 107 school districts and six towns where graded schools are maintained. Valuation of school property is \$71,605.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses.....	6,194	\$123,880
Cattle.....	12,750	202,200
Sheep.....	1,172	2,344
Hogs.....	2,756	8,264

COLVILLE is the county seat, situated near the Colville river and on the line of the S. & N. railway. It is a thriving town, well supplied with a bank, schools, churches and newspapers.

Other towns in the county worthy of mention are Northport, Marcus, Springdale, Chewelah and Newport. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	Wm. E. Richardson	Spokane, Wash.
Auditor.....	Fred Reinschl	Colville, "
Sheriff.....	Frank Ferguson	" "
Clerk.....	F. Y. Wilson.....	" "
Treasurer.....	Geo. W. Seal.....	" "
Attorney.....	H. G. Kirkpatrick.....	" "
Assessor.....	A. L. Knapp.....	" "
Supt. of Schools.....	F. L. Grurstiad.....	" "
Surveyor.....	W. L. Bowen.....	" "
Coroner.....	R. D. McRea.....	" "
Commissioner 1st Dist.....	J. M. Fish.....	" "
Commissioner 2d Dist.....	J. C. DeHaven.....	" "
Commissioner 3d Dist.....	M. C. McKelly.....	" "

THURSTON.

Area of county 700 square miles; population in 1900, 9,927; estimated population for 1903, 12,295.

Transportation facilities: The N. P. Ry. traverses the county from north to south, and the Olympia branch extends southwesterly through the county, its total railway mileage being ninety-nine miles. In addition to this, it has a line of steamers regularly plying between Olympia and other ports on the Sound.

The principal industry of the county as yet is lumbering, there being a large number of saw mills and shingle mills in operation. In the southeastern part of the county coal is found, and at several points, particularly Tenino, there are valuable quarries of sandstone. This is also one of the leading fruit growing counties of the state, having many thousands of trees producing a fine quality of apples, prunes, pears and cherries, and in addition to these the finest berries and small fruits.

Oyster culture is an important industry in this county. The Puget Sound oyster is given the name of "Olympia," the capital of the state, and the Olympia oyster is particularly noted wherever the same can be

obtained. There are a large number of creameries in the county, producing a large amount of butter, and dairying is annually becoming of more importance as one of its leading industries.

There are sixty-seven school districts in the county and five towns where graded schools are maintained. The total valuation of school property is \$136,175; the total assessed valuation of real property with improvements is \$2,849,380.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	1,643	\$ 49,290
Cattle.....	8,354	182,664
Sheep.....	1,368	2,736
Hogs.....	1,346	4,038

OLYMPIA is the county seat, located at the head of Puget Sound, and it is also the capital of the state. It has an estimated population of 5,020. As the seat of the state government, all the executive officers, the supreme court and the state library are located here. The national government has improved its harbor by dredging, so as to admit of its navigation by all ordinary Sound steamers. It has several saw mills, a wood pipe manufacturing establishment, a cannery and fruit preserving plant, a grist mill, brewery and other industrial institutions. The city has two daily newspapers, banks, a hospital, numerous churches and a good system of public schools. Other towns in the county are Tenino, Bucoda, Yelm and Little Rock. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	O. V. Linn.....	Olympia, Wash.
Auditor.....	Geo. McKenzie.....	" "
Sheriff.....	E. A. McClarty.....	" "
Clerk.....	W. M. Nunn.....	" "
Treasurer.....	A. A. Phillips.....	" "
Attorney.....	Frank C. Owings.....	" "
Assessor.....	F. J. X. Miller.....	" "
Supt. of Schools.....	Fred J. Brown.....	" "
Surveyor.....	John D. Henry.....	" "
Coroner.....	J. W. Mowell.....	" "
Commissioner 1st Dist.....	H. M. Pierce.....	" "
Commissioner 2d Dist.....	Geo. W. Bell.....	" "
Commissioner 3d Dist.....	R. M. Paton.....	" "

WAHAKIACUM.

Area of county, 274 square miles; population in 1900, 2,819; estimated population for 1903, 3,276.

Transportation facilities: The only means of transportation from this county at the present time is by steamer on the Columbia river, the nearest railroad being on the southern side of the Columbia in Oregon.

Lumbering is the most important industry in this county, much of its area being still covered with timber. The fisheries industry has been developed to a considerable extent in the county and has been one of its greatest resources for several years. There are several large canneries in the county, which give employment to a great many people and furnish a means of livelihood for hundreds of fishermen.

There are twenty-two school districts in the county and two towns in which graded schools are maintained. The total valuation of school

property is \$16,883; the total assessed valuation of real property with improvements is \$560,307.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	364	\$ 9,100
Cattle.....	2,941	47,056
Sheep.....	244	488
Hogs.....	400	1,200

CATHLAMET, situated on the Columbia river, is the county seat. It has an estimated population of 500. The town has a newspaper, a fish cannery, several churches and civic societies and a good system of public schools. Other towns in the county are Skamokawa and Brookfield. The county officers are :

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	A. E. Rice.....	Centralia, Wash.
Auditor.....	John G. Bailey.....	Cathlamet, "
Sheriff.....	M. S. Hongen.....	" "
Clerk.....	Geo. F. Hanigan.....	" "
Treasurer.....	Jesse Baker.....	" "
Attorney.....	J. Bruce Polwarth.....	" "
Assessor.....	John S. Masten.....	" "
Supt. of Schools.....	Maude Kimball.....	" "
Surveyor.....	Thomas H. Allman.....	" "
Coroner.....	C. W. Bales.....	" "
Commissioner 1st Dist.....	John Christensen.....	" "
Commissioner 2d Dist.....	John Carlison.....	" "
Commissioner 3d Dist.....	T. S. Barr.....	" "

WALLA WALLA.

Area of county, 2,000 square miles; population in 1900, 18,680; estimated population for 1903, 24,000.

Transportation facilities: This county has three lines of railroad, to-wit: The N. P. with 11 miles; the O. R. & N. with 150 miles, and the W. & C. R. with 108 miles of railway within its borders. These roads and the various branches extend to every part of the county and thus afford the best of facilities for the marketing of its crops.

Walla Walla county is one of the oldest settled counties in the State of Washington, and was the home of Dr. Marcus Whitman the missionary, who settled there in 1836, and whom it is alleged did so much to save the Oregon territory to the United States, and who was massacred by the Indians in 1847.

In this county the first attempts at extensive wheat growing on the uplands were made, and it was thus demonstrated that the uplands of Eastern Washington were the richest wheat producing lands in the world. In this county farming is extensively carried on, it producing from three to five million bushels of wheat annually, in addition to large crops of oats, barley, flax and alfalfa. The Walla Walla valley is also famous as a fruit country, many hundreds of acres being devoted to this important industry. Here is located the Blalock fruit farm containing more than 1,000 acres. The Blue mountains occupy the eastern part of the county in which is found a wood supply and some merchantable timber.

There are seventy school districts in the county and eight towns where graded schools are maintained. The total valuation of school

property is \$310,442; the total assessed valuation of real property, including improvements, \$7,646,326; personal property, \$2,460,494.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	11,190	\$223,800
Cattle.....	10,191	163,056
Sheep.....	37,724	75,448
Hogs.....	6,976	20,928

WALLA WALLA is the county seat, located on the line of the O. R. & N. Ry. and the W. C. Ry. The city has an estimated population of 12,709. It is called the "Garden City" of the state, and has many beautiful homes surrounded by lawns and gardens, and the streets are lined with shade trees. It has a number of flouring mills, sash and door factories, foundries, stores and wholesale houses, and it is a commercial city of considerable importance. It is well supplied with banks, newspapers, hospitals, churches and school buildings. Adjoining the city is a United States military post, known as Fort Walla Walla, and the city is also the location of the state penitentiary. Terms of the United States Circuit and District Courts are held here, and it is also the location of a United States land office. It is the location of Whitman College, an educational institution of great importance to the locality and in fact to the state, and in which the citizens of Walla Walla are deeply interested.

Among other towns in the county is Waitsburg, a place of considerable importance, having an estimated population of 1,634. Touchet, Dixie and Prescott are trading points in the county. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	Thomas H. Brents.....	Walla Walla, Wash.
Auditor.....	W. J. Honeycutt.....	" " "
Sheriff.....	Charles S. Painter.....	" " "
Clerk.....	Arthur A. Hauerbach.....	" " "
Treasurer.....	William B. Hawley.....	" " "
Attorney.....	Lester S. Wilson.....	" " "
Assessor.....	Richard J. Berryman.....	" " "
Supt. of Schools.....	J. Elmer Myers.....	" " "
Surveyor.....	Lewis W. Loehr.....	" " "
Coroner.....	Winfield D. Smith.....	" " "
Commissioner 1st Dist.....	Frank E. Smith.....	" " "
Commissioner 2d Dist.....	Edward Cornwall.....	" " "
Commissioner 3d Dist.....	J. N. McCaw.....	" " "

WHATCOM.

Area of county, 2,000 square miles; population in 1900, 24,116; estimated population for 1903, 43,257.

Transportation facilities: The N. P. and G. N. Rys. both traverse the county from north to south, and a branch of the N. P. is extended from Wickersham to the city of Whatcom. The B. B. & B. C. Ry., a local line, has forty-one miles of road constructed, its terminus being Whatcom, and extending northeasterly towards the Mt. Baker mining district. It is reported that this line is to be extended to connect with the Union Pacific at Spokane. In addition to the railway service, steamers of all classes ply between Whatcom, Fairhaven and Blaine and other ports on the Sound and elsewhere throughout the world.

The greatest industry of this county is lumbering, there being large tracts of timber land yet untouched within its borders. Fishing is another important industry in the county, being a source of large revenues to its people. The Pacific American Fisheries Company, the A. & C. Co. and other large corporations have located large canneries at Fairhaven and Blaine, which have been erected at great cost, and have a capacity of a half million cases per year, the value of which would be in excess of \$2,000,000.

Valuable coal deposits exist in the county. The Blue Canyon mine has been developed and its product has been classed among the better grades of coal, its output being 150,000 tons annually.

The Nooksack valley, consisting of a large area, is most fertile, and here are found some of the richest and best improved farms in the state. All branches of agriculture are in a flourishing condition, dairying and stock raising being on the increase, as is also horticulture and fruit raising. In this valley is produced a good quality of hops, hay, oats, barley and choice vegetables. The eastern portion of the county is mountainous and is drained by the Skagit river. Near the headwaters of this river is the Slate Creek mining district, and to the west of it lies the Mt. Baker mining district, in which valuable discoveries have been made, and which is more fully described in our article on metal mines published elsewhere in this book.

There are seventy-nine school districts in the county and seventeen towns where graded schools are maintained. The total valuation of school property is \$305,366; the total assessed valuation of real property, including improvements, is \$7,639,640, and of personal property, \$2,087,893.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	2,295	\$ 68,850
Cattle.....	7,840	125,440
Sheep.....	4,882	9,764
Hogs.....	1,473	4,419

WHATCOM is the county seat, situated on Bellingham bay, with an estimated population of 14,890. The city of Fairhaven, also located on the bay immediately adjoining, has an estimated population of 6,309. These two cities are united by an electric railway system and have for years been practically one city, and they have now voted to consolidate the two cities under the name of BELLINGHAM.

The name Bellingham is known all over the world in shipping circles, and the new city of Bellingham will have an estimated population of 21,199, thus becoming a city of the first-class, coming into more prominence as one of the chief cities of the Pacific coast.

Whatcom is a sub-port of entry, having a deputy collector, and is the location of a State Normal School. The largest fish canneries in the state are situated here, and it has numerous large saw mills and shingle mills, a ship building plant, breweries, machine shops and other manufacturing establishments. Its harbor is being improved by the

government. It has several daily and weekly newspapers, a number of banks, hospitals, churches and a good public school system.

Blaine is the next important town in the county, situated on the Sound at the international boundary line. Its principal industry is the fisheries, several canneries being located there. It has an estimated population of 1,977, a bank, newspapers, churches and good schools. Other towns in the county are Sumas, Lynden and Wickersham. The county officers are :

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	Jere Neterer.....	Whatcom. Wash.
Auditor.....	W. R. Sybert.....	" "
Sheriff.....	L. A. Thomas.....	" "
Clerk.....	Elmer B. Smith.....	" "
Treasurer.....	F. F. Handschy.....	" "
Attorney.....	Parker Ellis.....	" "
Assessor.....	James Elder.....	" "
Supt. of Schools.....	R. J. Schusman.....	" "
Surveyor.....	C. M. Adams.....	" "
Coroner.....	H. S. Noice.....	" "
Commissioner 1st Dist.....	J. L. Easton.....	
Commissioner 2d Dist.....	R. L. Kline.....	
Commissioner 3d Dist.....	Thomas Slater.....	

WHITMAN.

Area of county, 2,160 square miles ; population in 1900, 25,360 ; estimated population for 1903, 41,500.

Transportation facilities : This county has numerous branch lines of railway of the O. R. & N. and N. P. roads crossing it in divers directions and within reasonable distance from all parts of the county, affording the best of shipping facilities.

The county is composed largely of upland, rolling prairies, interspersed here and there with valleys affording the necessary drainage. Nine-tenths of the land is tillable, and the soil is a deep, rich loam or volcanic ash. There are some six thousand farms in the county with approximately 800,000 acres under cultivation.

This county still claims to be the banner agricultural and stock county of the state. It produced during the crop season of 1901 more than 10,000,000 bushels of wheat. In addition to its grain production, it has a large area of land devoted to fruit culture, and Whitman county apples have the reputation of being first-class in the market. Several thousand acres have been planted to orchards within the past year.

It will be seen by reference to live stock and valuations that this industry is making rapid progress, not only in the increased number of stock but in the quality, some of the citizens of this county being engaged in propagating thoroughbred cattle, as will be seen by reference to some of the illustrations in this volume. With the development of forage grasses it is expected that this industry will progress until it will not be of second importance in this county or section of the state.

There are 164 school districts in the county and twenty-two towns where graded schools are maintained. The total valuation of school property is \$334,954 ; the total assessed valuation of real property, with

improvements, is \$11,033,379; the assessed valuation of personal property in the county is \$2,865,872.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	28,354	\$708,850
Cattle.....	45,214	723,424
Sheep.....	61,341	122,682
Hogs.....	25,102	75,306

COLFAX is the county seat, situated on the Palouse river and a branch of the O. R. & N. Ry. It has an estimated population of 3,248. It is the location of a Baptist college and a Catholic academy. It has several banks, newspapers, electric light and water works, various manufacturing establishments, a packing house and a good system of schools.

Another important town in the county is Pullman, the location of the Washington Agricultural College and School of Science, having an estimated population of 2,411. Other towns in the county are Palouse City, with an estimated population of 1,673, Farmington with 794, Tekoa with 1,347, Garfield with 1,133, Oakesdale with 1,379, Rosalia with 871, Elberton with 672, Colton with 871 and Uniontown with 784. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	S. J. Chadwick.....	Colfax. Wash.
Auditor.....	H. H. Wheeler.....	" "
Sheriff.....	Joseph Canutt.....	" "
Clerk.....	W. O. McCaw.....	" "
Treasurer.....	L. E. Allen.....	" "
Attorney.....	Robert M. Hanna.....	" "
Assessor.....	R. H. Duff.....	" "
Supt. of Schools.....	S. M. McCroskey.....	" "
Surveyor.....	Dennis P. Woods.....	" "
Coroner.....	D. H. Shaw, Sr.....	" "
Commissioner 1st Dist.....	A. B. Willard.....	" "
Commissioner 2d Dist.....	J. S. Klemgard.....	" "
Commissioner 3d Dist.....	B. F. Sherfey.....	" "

YAKIMA.

Area of county, 5,500 square miles; population in 1900, 13,462; estimated population for 1903, 26,664.

Transportation facilities: The county is traversed from northeast to southwest by the main line of the N. P. Ry. through the Yakima valley, thus affording the best of shipping facilities for its produce.

The county extends from the Columbia river on the east to the Cascade mountains on the west, the greater part of its area being broken. The rougher portions of the county are devoted chiefly to grazing, the soil of the valley being of the volcanic ash. Irrigation has been carried on in this county on a large scale, and many thousands of acres heretofore considered practically worthless have been transformed into the most productive farming section. On these lands are produced the finest crops of hops, choice vegetables, fruits and melons. Perhaps the greatest and most valuable crop is alfalfa.

Yakima is the banner county for sheep raising in the state, having according to the last assessment 153,228 of these animals. As to the



PLOWING ON AN EASTERN WASHINGTON WHEAT FARM.



COMBINED PLOW AND SEEDER.
Operated by Steam.

value of the irrigated lands in this county, reference is had to the articles on irrigation and horticulture elsewhere in this book. The farms for the most part are small, which afford a maximum of attention, and the results are correspondingly gratifying. Dairying is a most important industry in the county, and with the extension of the irrigated section will increase in importance.

There are sixty-nine school districts in the county and twenty-two towns where graded schools are maintained. The total valuation of school property is \$157,352; of real property, including improvements, \$4,995,165; the assessed valuation of personal property is \$1,138,772.

<i>Live Stock.</i>	<i>No.</i>	<i>Value.</i>
Horses and mules.....	7,441	\$148,820
Cattle.....	19,338	309,408
Sheep.....	153,228	306,456
Hogs.....	2,065	6,195

NORTH YAKIMA is the county seat, situated on the Yakima river and the main line of the N. P. Ry. It is the center of the business industry of the Yakima valley, and is a growing and prosperous city, its estimated population now being 7,936. It has several newspapers, banks, churches, electric lights and a good system of public schools. It is said to be one of the best initial shipping points on the line of the N. P. Ry.

Other towns in the county are Sunnyside with an estimated population of 1,540, and Prosser with an estimated population of 834, while Toppenish, Zillah, Mabton and Kiona are trading points in the county. The county officers are:

<i>Office Held.</i>	<i>Name of Officer.</i>	<i>Residence.</i>
Superior Judge.....	Frank H. Rudkin.....	North Yakima. Wash.
Auditor.....	W. B. Newcomb.....	" " "
Sheriff.....	R. A. Grant.....	" " "
Clerk.....	J. W. Day.....	" " "
Treasurer.....	E. G. Pecks.....	" " "
Attorney.....	W. P. Guthrie.....	" " "
Assessor.....	Harry Coonse.....	" " "
Supt. of Schools.....	S. A. Dickey.....	" " "
Surveyor.....	W. F. Maloy.....	" " "
Coroner.....	E. P. Hilliker.....	" " "
Commissioner 1st Dist.....	F. J. Kandle.....	" " "
Commissioner 2d Dist.....	W. S. Lince.....	" " "
Commissioner 3d Dist.....	Lafayette Pace.....	" " "

SUPERIOR JUDGES.

<i>Name.</i>	<i>District.</i>	<i>Residence.</i>
W. R. BELL.....	King.....	Seattle.
ARTHUR E. GRIFFIN.....	King.....	Seattle.
BOYD J. TALLMAN.....	King.....	Seattle.
GEO. E. MORRIS.....	King.....	Seattle.
R. B. ALBERTSON.....	King.....	Seattle.
W. H. SNELL.....	Pierce.....	Tacoma.
THAD. HUSTON.....	Pierce.....	Tacoma.
W. O. CHAPMAN.....	Pierce.....	Tacoma.
GEORGE W. BELT.....	Spokane.....	Spokane.
HENRY L. KENNAN.....	Spokane.....	Spokane.
WM. E. RICHARDSON.....	Stevens and Spokane.....	Spokane.
A. L. MILLER.....	Clarke, Skamania, Cowlitz and Klickitat.....	Vancouver.
GEORGE C. HATCH.....	Jefferson and Island.....	Port Angeles.
O. V. LINN.....	Thurston.....	Olympia.
S. J. CHADWICK.....	Whitman.....	Colfax.
GEORGE A. JOINER.....	Skagit and San Juan.....	Anacortes.
C. H. NEAL.....	Adams and Lincoln.....	Davenport.
C. VICTOR MARTIN.....	Okanogan, Douglas, Chelan and Ferry.....	Wenatchee.
JOHN C. DENNY.....	Snohomish and Kitsap.....	Everett.
JERE NETERER.....	Whatcom.....	Whatcom.
A. C. RICE.....	Lewis and Wahkiakum.....	Centralia.
THOS. H. BRENTS.....	Walla Walla.....	Walla Walla.
FRANK H. RUDKIN.....	Kittitas, Yakima and Franklin.....	N. Yakima.
MASON IRWIN.....	Chehalis and Mason.....	Aberdeen.
CHESTER F. MILLER.....	Columbia, Garfield and Asotin.....	Dayton.

OFFICERS AND COMMISSIONERS APPOINTED BY THE GOVERNOR.

<i>Name.</i>	<i>Official Position.</i>	<i>Residence.</i>
JAMES A. DRAIN.....	Adjutant General.....	Olympia.
T. R. KERSHAW.....	Fish Commissioner and Game Warden.....	Whatcom.
E. A. McDONALD.....	Dairy and Food Commissioner.....	Seattle.
PETER VAN HOLDERBEKE.....	Horticultural Commissioner.....	Tacoma.
WILLIAM BLACKMAN.....	Commissioner of Labor.....	Olympia.
CHARLES OWEN.....	Inspector of Coal Mines.....	Tacoma.
J. W. ARROWSMITH.....	Grain Commissioner.....	Tacoma.
S. S. KING.....	Deputy Grain Commissioner.....	Tacoma.
JOSEPH A. GABEL.....	State Librarian.....	Olympia.
C. WILL SCHAEFFER.....	Assistant Librarian.....	Olympia.

The Secretary of State is *ex-officio* Insurance Commissioner, and Commissioner of Statistics, Agriculture and Immigration.

The State Board of Control appointed by the Governor, as at present constituted, consists of GRANT NEAL, from Skagit county, chairman; JESSE MILLS, of Thurston county, and H. T. JONES, of Spokane county.

The Commissioner of Public Lands, Secretary of State and Superintendent of Public Instruction constitute the Board of State Land Commissioners.

The Governor, Attorney General and judges of the Supreme Court constitute the State Library Board

ROSTER OF THE NATIONAL GUARD OF WASHINGTON.

Governor HENRY MCBRIDE, Commander-in-Chief.
JAMES A. DRAIN, Brigadier and Adjutant General.

<i>Name.</i>	<i>Official Position.</i>	<i>Residence.</i>
JAMES A. DRAIN.....	Brig. Gen. and Adjutant General...	Olympia.
GEORGE S. LAMPING.....	Col. Comdg. 2d Infantry.....	Seattle.
LIEUT-COL. JOHN KINZIE.....	Instructor in Guard Duty.....	Pullman.
LIEUT-COL. ORTIS HAMILTON..	Third Batt., 2d Infantry.....	Colfax.
MAJ. OTTO A. CASE.....	First Batt., 2d Infantry.....	Seattle.
MAJ. WM. L. LEMON.....	Second Batt., 2d Infantry.....	North Yakima.
CAPT. F. T. LIGGETT.....	Inspector of Arms.....	North Yakima.
CAPT. MATT H. GORNLEY.....	Adjutant 2d Infantry.....	Seattle.
CAPT. CHAS. E. HEAD.....	Commissary 2d Infantry.....	Seattle.
CAPT. HARVEY J. MOSS.....	Quartermaster 2d Infantry.....	Green Lake.
CAPT. E. G. GRIGGS.....	Troop B, Cavalry.....	Tacoma.
CAPT. H. M. RICHARDSON.....	Company H, 2d Infantry.....	Spokane.
CAPT. JOHN STRINGER.....	Company B, 2d Infantry.....	Seattle.
CAPT. WM. H. HILDEBRAND....	Company M, 2d Infantry.....	Whatcom.
CAPT. CHAS. K. GREENE.....	Company K, 2d Infantry.....	Everett.
CAPT. WM. M. INGLIS.....	Company D, 2d Infantry.....	Seattle.
CAPT. JAMES WILLIAMS.....	Company I, 2d Infantry.....	Waitsburg.
CAPT. HERBERT NUNN.....	Company G, 2d Infantry.....	Vancouver.
CAPT. C. T. DULIN.....	Company E, 2d Infantry.....	North Yakima.
CAPT. A. C. STEINMAN.....	Company C, 2d Infantry.....	Ellensburg.
CAPT. THAYER LAMB.....	Company F, 2d Infantry.....	Hoquiam.
CAPT. J. MURRAY MACLEAN....	Company A, 2d Infantry.....	Tacoma.
CAPT. E. E. MCCUTCHEON.....	Company L, 2d Infantry.....	Colfax.
FIRST LIEUT. A. G. SIMMER....	Comdg. Company A. Signal Corps..	Seattle.
CAPT. S. S. SULLIGER.....	Chaplain.....	Whatcom.

MEDICAL DEPARTMENT.

MAJ. E. M. BROWN.....	Surgeon.....	Tacoma.
CAPT. J. N. POCOCK.....	Assistant Surgeon.....	Colfax.

The National Guard of this state is up-to-date in every respect, and as an evidence of this fact we quote some remarks made by Major George E. McGunnegle, seventeenth infantry, inspector of organized militia for the State of Washington:

"The officers are intelligent, ambitious and uniformly well posted and interested in their duties. The guard of this state has made rapid strides towards the nationalized idea which the militia bill contemplates. The organization and practice are both based upon military principles, and social features cut no figure in the appointment of officers. Promotions are made according to merit and only after a satisfactory examination before a duly appointed board. The physical examination for enlistment differs in no particular from that in the army, and the oath contains a clause requiring the soldier to respond to the call of the President."

UNITED STATES OFFICIALS.

SENATORS AND REPRESENTATIVES IN CONGRESS.

<i>Name.</i>	<i>Official Position.</i>	<i>Postoffice Address.</i>
ADDISON G. FOSTER.....	United States Senator.....	Spokane.
LEVI ANKENY.....	United States Senator.....	Walla Walla.
WESLEY L. JONES.....	Representative in Congress.....	North Yakima.
FRANCIS W. CUSHMAN.....	Representative in Congress.....	Tacoma.
WILL E. HUMPHRIES.....	Representative in Congress.....	Seattle.

JUDICIAL DEPARTMENT.

<i>Name.</i>	<i>Official Position.</i>	<i>Residence.</i>
CORNELIUS H. HANFORD.....	U. S. District Judge.....	Seattle.
JESSE A. FRY.....	U. S. District Attorney.....	Seattle.
EDWARD E. CUSHMAN.....	Assistant U. S. District Attorney..	Tacoma.
MARK A. HOPKINS.....	Clerk of District Court and Deputy Circuit Clerk.....	Seattle.
A. REEVES AYERS.....	Clerk of Circuit Court and Deputy District Clerk.....	Tacoma.
CHAS. B. HOPKINS.....	United States Marshal.....	Tacoma.

DEPUTIES.

H. W. TYLER.....	Seattle.	FRANK L. CROSBY.....	Tacoma.
JOHN STRINGER.....	Seattle.	JRA S. DAVISSON.....	Tacoma.
FRED. M. LATHE.....	Seattle.	THOS. M. MORRIS.....	Tacoma.
PELIX M. PUGH.....	Spokane.	A. N. SHORT.....	North Yakima
GEORGE DAVENPECK.....	Spokane.		

CUSTOMS DEPARTMENT.

<i>Name.</i>	<i>Official Position.</i>	<i>Residence.</i>
CLARENCE W. IDE.....	U. S. Collector of Customs.....	Port Townsend.
HENRY BLACKWOOD.....	Special Deputy Collector.....	Port Townsend.

DEPUTY COLLECTORS OF CUSTOMS.

A. P. MITTEN.....	Seattle.	W. A. FAIRWEATHER.....	Tacoma.
F. H. MULFORD.....	Everett.	ROBERT KNOX.....	Whatcom.
DOUGLAS ALLMOND.....	Anacortes.	M. S. HILL.....	Blaine.
S. B. CONNOR.....	Sumas.	J. E. DANIELS.....	Northport.
L. K. BOISSONNAULT.....	Danville.	T. T. ALDWELL.....	Port Angeles.
O. H. CULVER.....	Friday Harbor.	J. A. HOOD.....	Aberdeen.
L. M. HARPER.....	Roche Harbor.	M. D. EGBERT.....	South Bend.

INTERNAL REVENUE DEPARTMENT.

<i>Name.</i>	<i>Official Position.</i>	<i>Residence.</i>
BENJ. D. CROCKER.....	Collector Internal Revenue.....	Tacoma.

DEPUTY REVENUE COLLECTORS.

H. S. HUDSON.....	Tacoma.	THOS. PAYNE.....	Seattle.
JOHN LEAHY.....	Tacoma.	SAM'L A. MADGE.....	Olympia.
CHAS. ALEXANDER.....	Tacoma.	C. A. COLE.....	Spokane.
EDWARD R. HARE.....	Tacoma.	DAVID W. TERWILLIGER.....	Walla Walla.
CLARA G. BUFFINGTON.....	Tacoma.	JOHN MCKEE.....	Everett.
E. V. DELACEY.....	Tacoma.	JOHN A. CAMERON.....	Juneau, Alaska

STAMP DEPUTIES.

JAMES S. BUSHNELL....	Seattle.	ROSIE A. MUTTER.....	Spokane.
C. M. SUMMERS.....	Juneau, Alaska.		

UNITED STATES GUAGERS.

HOWARD C. DODSON..... Tacoma. DAVID T. SEARS..... Spokane.

CENSUS STATISTICS.

We herewith give the population of the state as shown by the census of 1890 and 1900, with our estimate for 1903, which shows the phenomenal increase of 46.7 per cent in three years, or from 1900 to 1903. In arriving at the figures, the method adopted by this Bureau is reasonably accurate, following a three-fold rule of calculation. By comparing the actual census taken in some of the counties and cities with our estimates its reasonable accuracy has been established. As an instance, in one county where the actual census was taken by the assessor, having a total population of nearly 11,000, the difference between his census and our estimate was only 118. The estimates herewith are calculated on reports dating about June 1, 1903.

Table I.

POPULATION OF WASHINGTON; 1860 TO 1903.

Increase in three years, 46.7 per cent.

CENSUS YEARS.	Population.	Increase.	
		Number.	Per cent.
1903.....	759,687	241,584	46.7
1900.....	518,103	168,713	48.3
1890.....	349,390	274,274	365.1
1880.....	75,116	51,161	213.6
1870.....	23,955	12,361	106.6
1860.....	11,594		

Table II.
POPULATION OF THE STATE BY COUNTIES.

UNITED STATES CENSUS FOR 1890 AND 1900
Estimated by this Bureau 1903.

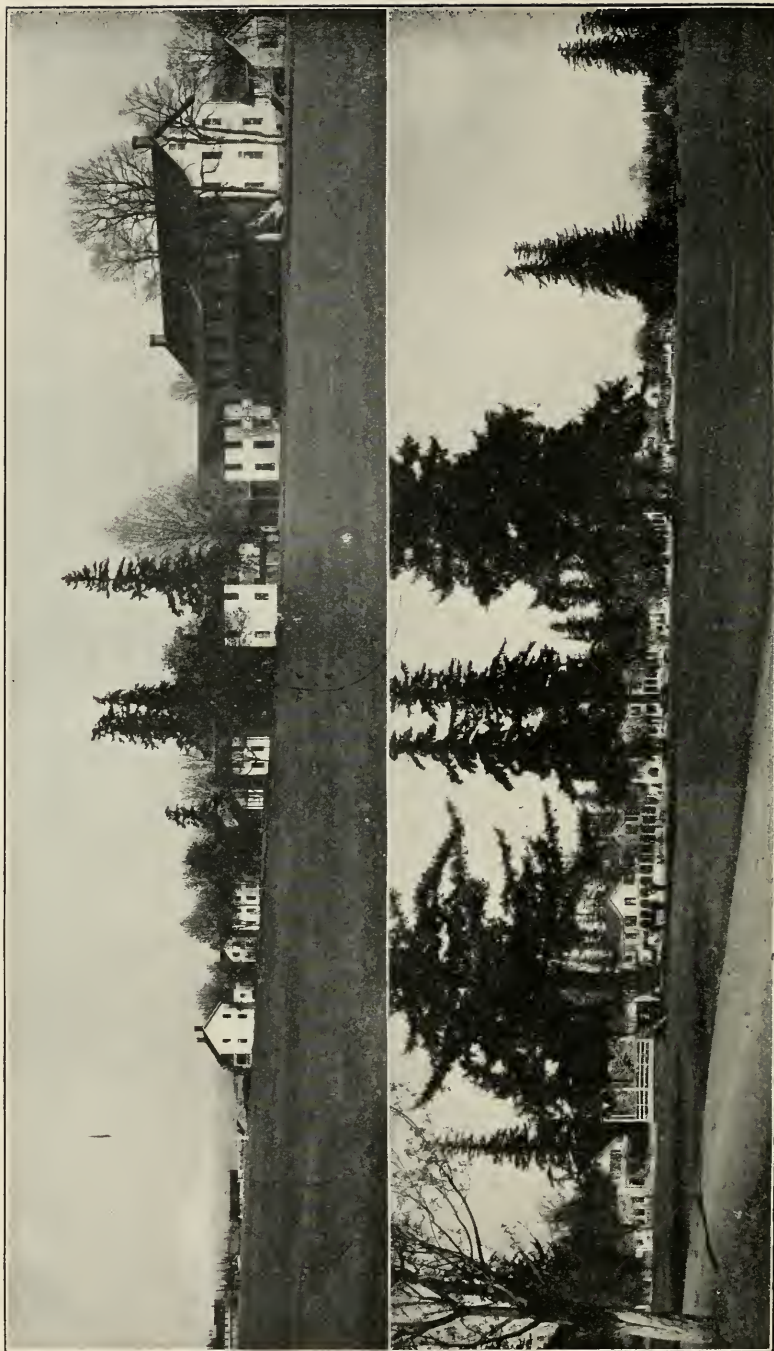
COUNTIES.	Population.		Increase.	Population.	Increase.	
	1890.	1900.	Per cent.		1903.	1903 over 1900.	Per cent.
Adams	2,098	4,840	130.7	9,646	4,806	99.2
Asotin	1,580	3,366	113.0	5,834	2,468	73.0
Chehalis	9,249	15,124	63.5	18,148	3,024	20.0
Chelan .....	.....	3,931	.....	7,547	3,616	92.0
Clallam	2,771	5,603	102.2	5,912	309	5.3
Clarke	11,709	13,419	14.6	15,500	2,081	15.6
Columbia	6,709	7,128	6.2	7,604	476	6.6
Cowlitz	5,917	7,877	33.1	8,439	562	7.1
Douglas	3,161	4,926	55.8	10,680	5,754	116.8
Ferry .....	.....	4,562	.....	4,646	84	1.2
Franklin	696	486	*30.2	3,615	3,129	643.8
Garfield	3,897	3,918	0.5	4,945	1,027	26.2
Island	1,787	1,870	4.6	2,618	748	40.0
Jefferson	8,368	5,712	*31.7	6,370	658	11.5
King	63,989	110,053	72.0	166,900	56,847	51.6
Kitsap	4,624	6,767	46.3	10,131	3,364	49.7
Kittitas	8,777	9,704	10.6	12,480	2,776	28.6
Klickitat	5,167	6,407	24.0	8,788	2,381	37.1
Lewis	11,499	15,157	31.8	21,626	6,469	42.6
Lincoln	9,312	11,969	28.5	18,571	6,602	55.1
Mason	2,826	3,810	34.8	4,268	458	12.0
Okanogan	1,467	4,689	219.6	7,660	2,971	63.3
Pacific	4,358	5,983	37.3	7,544	1,561	26.2
Pierce	50,940	55,515	9.0	77,704	22,189	39.9
San Juan	2,072	2,928	41.3	3,395	467	15.9
Skagit	8,747	14,272	63.2	20,744	6,472	45.3
Skamania	774	1,688	118.1	1,704	16	1.0
Snohomish	8,514	23,950	181.3	45,102	21,152	88.3
Spokane	37,487	57,542	53.5	74,804	17,262	29.9
Stevens	4,341	10,543	142.9	15,790	5,247	49.7
Thurston	9,675	9,927	2.6	12,295	2,348	23.6
Wahkiakum	2,526	2,819	11.6	3,276	457	16.2
Walla Walla	12,224	18,680	52.8	24,000	5,320	28.4
Whitcom	18,591	24,116	29.7	43,257	19,141	79.3
Whitman	19,105	25,360	32.7	41,500	16,140	63.6
Yakima	14,429	13,462	304.0	26,664	13,202	96.5
Totals	349,390	518,103	48.3	759,687	241,584	46.7

* Decrease.

Table III.

POPULATION OF INCORPORATED CITIES, TOWNS AND VILLAGES OF WASHINGTON FOR THE YEARS
1890, 1900 AND 1903.
(Incorporated Before 1900).

CITIES, TOWNS AND VILLAGES.	POPULATION.		
	1890.	1900.	<i>Estimated.</i> 1903.
Aberdeen town.....	1,688	3,747	5,436
Anacortes town.....	1,131	1,476	2,191
Asotin town.....	200	470	1,338
Auburn city.....	740	489	794
Ballard city.....	1,173	4,568	6,942
Blaine city.....	.....	1,592	1,977
Bossburg village.....	.....	247	385
Buckley town.....	.....	1,014	1,561
Castle Rock town.....	681	750	1,403
Centralia city.....	2,026	1,600	3,626
Chehalis city.....	1,309	1,775	2,548
Cheney town.....	647	781	1,005
Colfax city.....	1,649	2,121	3,248
Colton town.....	.....	251	871
Columbia town.....	.....	337	3,017
Colville town.....	589	594	945
Cosmopolis town.....	287	1,004	1,034
Davenport town.....	396	1,000	1,729
Dayton town.....	1,880	2,216	2,745
Edmonds city.....	.....	474	973
Elberton town.....	.....	297	672
Ellensburg city.....	2,768	1,737	2,894
Elma town.....	345	894	1,193
Everett city.....	.....	7,838	20,138
Fairhaven city.....	.....	4,228	6,309
Farmington town.....	418	434	794
Garfield town.....	317	697	1,133
Issaquah (Gilman).....	.....	700	1,263
Goldendale city.....	702	738	1,690
Hamiltown town.....	203	392	498
Hogiam city.....	1,302	2,608	3,132
Ilwaco town.....	517	584	843
Kalama town.....	325	554	840
Kelso town.....	354	694	1,106
Kent town.....	853	755	1,690
Kettle Falls town.....	.....	297	.....
La Conner town.....	398	564	643
Latah town.....	232	253	640
Lynden town.....	560	365	826
Marysville city.....	262	728	1,362
Medical Lake town.....	617	516	714
Montesano town.....	1,632	1,194	1,683
Mt. Vernon town.....	770	1,120	1,893
Northport city.....	.....	787	1,864
North Yakima city.....	1,535	3,154	7,936
Oakesdale town.....	528	928	1,379
Ocoosa village.....	.....	166	308
Olympia city.....	4,698	4,082	5,020
Orting town.....	623	728	1,078
Palouse city.....	1,119	929	1,673
Pasco town.....	.....	254	284
Pataha city.....	.....	157	259
Pomeroy city.....	661	953	1,659
Port Angeles city.....	.....	2,321	2,437
Port Townsend city.....	4,558	3,443	3,443
Prosser town.....	.....	229	834
Pullman city.....	868	1,308	2,411
Puyallup city.....	1,732	1,884	3,507
Republic city.....	.....	2,050	1,620



U. S. ARMY POST, VANCOUVER, WASH

Table III.—Population.—Continued,
(Incorporated before 1900.)

CITIES, TOWNS AND VILLAGES.	1890.	1900.	Esti- mated.
			1903.
Ritzville town.....		761	1,410
Rockford town.....	644	433	927
Rosalia town.....	248	379	870
Roslyn town.....	1,484	2,786	2,801
Seattle city.....	42,837	80,671	121,813
Sedro-Wooley town.....		885	2,684
Shelton town.....	648	833	1,064
Sidney village.....	226	254	630
Snohomish city.....	1,993	2,101	3,941
South Bend city.....		711	1,555
Spangle town.....	303	331	598
Spokane city.....	19,922	36,848	47,902
Sprague city.....	1,689	695	1,305
Stellacoom town.....	270	1,015	1,116
Sumas city.....		319	784
Sumner town.....	580	531	952
Tacoma city.....	36,006	37,714	52,799
Tekoa town.....	301	717	1,347
Toledo town.....	276	285	493
Tumwater town.....	410	270	476
Uniontown town.....	279	404	784
Vancouver city.....	3,545	4,006	4,510
Waitsburg city.....	817	1,011	1,634
Walla Walla city.....	4,709	10,049	12,709
Waterville town.....	293	482	1,064
Wenatchee town.....		451	2,121
Wilbur city.....	410	595	1,193
Winlock town.....		655	1,015
Whatcom city.....		6,834	14,890
Yakima (old town).....		287	365

(Incorporated since 1900).

Arlington town.....			1,312
Bremerton.....			1,396
Burlington.....			
Cle Elum.....			1,361
Chelan.....			721
Clarkston.....			2,068
Chewelah.....			609
Creston.....			497
Harrington.....			707
Lind.....			714
Monroe.....			1,048
Newport.....			
Prescott.....			518
Renton.....			1,447
Reardan.....			693
Sunnyside.....			1,540
South Park.....			1,505
Springdale.....			420
Snoqualmie.....			362
West Seattle.....			1,026
Wilson Creek.....			451

Table No. 4,
POPULATION OF THE SIX LARGEST CITIES OF THE STATE.

NAME OF CITY.	POPULATION.			Increase in three years
	1890.	1900.	1903.	
Seattle	42,837	80,671	121,813	41,142
Tacoma.....	36,006	37,714	52,799	15,085
Spokane.....	19,922	36,848	47,902	11,054
Everett.....		7,838	20,138	11,300
*Whatcom.....		6,834	14,890	8,060
Walla Walla.....	4,709	10,049	12,709	2,660

*Bellingham—Whatcom and Fairhaven consolidated, 21,199.

PARTIAL ABSTRACT OF VOTE FOR THE YEAR 1900.

COUNTY.	President.		Members of Congress		Secretary of State.	
	McKinley.....	Bryan.....	Republican.....	Democratic.....	S. H. Nichols, R.	James Brady, D.
Adams.....	461	523	440	520	433	530
Asotin.....	398	328	387	322	378	325
Chehalis.....	1,850	1,081	1,819	1,086	1,766	1,098
Chelan.....	577	573	559	576	556	563
Clallam.....	723	407	689	420	673	434
Clarke.....	1,668	1,025	1,627	1,018	1,615	1,037
Columbia.....	899	706	881	701	880	705
Cowlitz.....	1,171	619	1,144	621	1,089	630
Douglas.....	516	615	496	603	500	609
Ferry.....	423	830	412	814	405	817
Franklin.....	52	81	50	76	48	77
Garfield.....	528	437	506	427	497	438
Island.....	263	123	255	129	252	130
Jefferson.....	684	392	658	388	639	408
King.....	10,218	7,804	8,985	9,126	9,740	7,978
Kitsap.....	880	489	845	497	841	493
Kittitas.....	1,139	934	1,098	954	1,073	964
Klickitat.....	906	495	893	486	882	502
Lewis.....	1,907	1,382	1,867	1,412	1,845	1,420
Lincoln.....	1,414	1,585	1,402	1,555	1,344	1,580
Mason.....	514	455	494	446	498	456
Okanogan.....	457	714	448	663	464	650
Pacific.....	887	393	860	395	848	400
Pierce.....	6,269	3,702	6,402	3,362	5,721	3,792
San Juan.....	428	245	421	240	421	248
Skagit.....	1,814	1,220	1,762	1,239	1,749	1,247
Skamania.....	175	203	173	192	171	201
Snohomish.....	2,961	2,478	2,889	2,505	2,814	2,578
Spokane.....	5,515	5,125	5,341	5,043	5,324	5,097
Stevens.....	1,121	1,612	1,103	1,596	1,075	1,630
Thurston.....	1,298	978	1,284	972	1,280	956
Wahkiakum.....	396	207	372	212	364	216
Walla Walla.....	2,119	1,480	2,064	1,449	2,049	1,458
Whatcom.....	2,952	1,700	2,852	1,694	2,825	1,686
Whitman.....	2,366	2,826	2,358	2,705	2,317	2,689
Yakima.....	1,507	1,066	1,482	1,024	1,463	1,074
Totals.....	57,456	44,833	55,268	45,448	54,839	45,116

NOTE.—The vote for Prohibition, Socialist Labor and Social Democratic parties not given. Approximate number of votes for Prohibition party was 2,200; Socialist Labor, 950; Social Democratic, 2,000.

ELECTORAL VOTE BY STATES IN 1900 AND THE ELECTORAL VOTE FOR 1904, UNDER THE NEW APPORTIONMENT.

STATES.	1900.		1904.
	<i>Rep.</i>	<i>Dem.</i>	
Alabama.....		11	11
Arkansas.....		8	9
California.....	9		10
Connecticut.....	6		7
Colorado.....		4	5
Delaware.....	3		3
Florida.....		4	5
Georgia.....		13	13
Idaho.....		3	3
Illinois.....	24		27
Indiana.....	15		15
Iowa.....	13		13
Kansas.....	10		10
Kentucky.....		13	13
Louisiana.....		8	9
Maine.....	6		6
Maryland.....	8		8
Massachusetts.....	15		16
Michigan.....	14		14
Minnesota.....	9		11
Mississippi.....		9	10
Missouri.....		17	18
Montana.....		3	3
Nebraska.....	8		8
Nevada.....		3	3
New Hampshire.....	4		4
New Jersey.....	10		12
New York.....	36		39
North Carolina.....		11	12
North Dakota.....	3		4
Ohio.....	23		23
Oregon.....	4		4
Pennsylvania.....	32		34
Rhode Island.....	4		4
South Carolina.....		9	9
South Dakota.....	4		4
Tennessee.....		12	12
Texas.....		15	18
Utah.....	3		3
Vermont.....	4		4
Virginia.....		12	12
Washington.....	4		5
West Virginia.....	6		7
Wisconsin.....	12		13
Wyoming.....	3		3
Total.....	292	155	476

In 1904 it will require 239 electoral votes to elect.

DAIRYING STATISTICS.

Table I.
CREAMERIES—AMOUNT OF BUTTER MANUFACTURED.

COUNTIES.	No. of Creameries Operating		Pounds of Butter Manufactured.	
	1902.	1901.	1902.	1901.
Chehalis.....	7	5	64,314	47,458
Clallam.....	35	22	359,847	130,344
Clarke.....	18	13	336,402	248,445
Columbia.....	1	1	12,264	10,200
Cowlitz.....	2	2	10,500	9,000
Island.....	4	1	78,321	3,244
Jefferson.....	10	4	269,249	64,883
King.....	18	10	1,016,006	231,290
Kittitas.....	7	19	746,667	973,206
Klickitat.....	1	9	1,371	700,322
Lewis.....	25	18	201,648	147,200
Lincoln.....	1	1	25,000	25,600
Mason.....	1	1	674	474
Pacific.....	1	1	29,305	22,037
Pierce.....	40	20	345,152	288,865
San Juan.....	1	1	2,726	2,520
Skagit.....	18	13	251,714	221,869
Snohomish.....	36	16	385,131	211,161
Spokane.....	2	3	377,082	347,722
Stevens.....	7	8	70,354	64,314
Thurston.....	90	62	250,562	226,095
Wahkiakum.....	1	1	61,256	49,716
Walla Walla.....	2	3	208,780	170,717
Whatcom.....	7	6	377,262	318,671
Whitman.....	5	4	140,112	111,575
Yakima.....	5	5	281,558	243,750

The number of creameries in the state as shown in Table I for the year from Nov. 1, 1901, is 249, and the amount of butter manufactured is 4,886,823 pounds and the number of creameries for the year from Nov. 1, 1901, to Nov. 1, 1902, is 345, and the amount of butter manufactured is 5,833,251 pounds. This shows an increase of 996,423 pounds. One hundred and eighty creameries filled out the blanks so we estimated the balance of 165 from the reports of the 180.

Table No. 2.
CHEESE FACTORIES AND AMOUNT OF PRODUCT.

YEAR.	No. of factories.	No. pounds cheese, Cheeder and Young Am.
1900.....	34	1,016,073
1901.....	37	1,105,933
1902.....	41	1,128,735
Increase in two years of.....		112,662

Table No. 3.

THE AMOUNT OF BUTTER AND CHEESE HANDLED BY THE FOLLOWING CITIES DURING THE YEARS 1901 AND 1902.

CITIES.	<i>Washing- ton Cream- ery Butter.</i>	<i>Eastern Creamery Butter.</i>	<i>California and Oregon Creamery Butter.</i>	<i>Washing- ton Cheese,</i>	<i>Eastern Cheese.</i>	<i>California and Oregon Cheese.</i>
Seattle.....	1,799,909	2,298,800	535,547	228,339	376,000	627,024
Tacoma.....	998,000	512,000	84,000	130,000	204,000	98,000
Spokane.....	570,000	775,000	20,000	170,000	214,000	30,000

COMMENTS ON TABLE 3,

You will notice from the above table that there was shipped to the three principal cities of the state 3,585,800 pounds of eastern butter and 794,000 pounds of eastern cheese and 755,024 pounds of California and Oregon cheese. The large amount of butter and cheese shipped from other states indicates that the production of butter in this state is not gaining on the increased consumption, which should encourage every dairyman to increase his herd.

COAL MINING STATISTICS.

Table No. 1.

COAL MINED AND EXPORTED.

YEAR.	<i>Number of tons mined.</i>	<i>Value at mine.</i>	<i>Number tons exported.</i>	<i>Value.</i>
1901.....	2,466,190	\$4,858,394.30	1,128,525	\$3,554,858
1902.....	2,690,789	5,300,854.22	860,516	2,710,625

Table No. 2.

STATEMENT SHOWING NUMBER OF TONS OF COAL MINED AND NUMBER OF EMPLOYES FOR 1901.

NAME OF COMPANY.	Location of Mines and Post-office Address.	County.	Number of (short) tons produced.....	Number days in actual operation.....	Number of employes under ground.....	Number of employes above ground.....	Total number of employes.....
Northwestern Improvement Co.....	Roslyn.....	Kittitas..	1,005,027	302	1,465	141	1,606
Carbon Hill Coal Co.....	Carbonado.....	Pierce....	323,395	293	340	145	485
Wilkeson Coal & Coke Co.....	Wilkeson.....	Pierce....	125,028	290	173	65	238
South Prairie Coal Co.....	Burnett.....	Pierce....	77,255	245	156	43	199
Western American Co.....	Fairfax.....	Pierce....	39,513	313	100	50	150
Gale Creek Co.....	Wilkeson.....	Pierce....	18,900	298	48	16	64
Pacific Coast Co.....	New Castle.....	King.....	130,957	228	185	42	227
Pacific Coast Co.....	Franklin No. 7.....	King.....	88,217	300	130	21	151
Pacific Coast Co.....	Franklin No. 1.....	King.....	4,494	300	51	15	66
Pacific Coast Co.....	Franklin Gem.....	King.....	36,460	242	54	6	60
Pacific Coast Co.....	Lawson.....	King.....	97,329	300	159	20	179
Black Diamond Coal Mining Co.....	Black Diamond.....	King.....	227,000	313	325	75	400
Cedar Mountain Coal Co.....	Cedar Mountain.....	King.....	13,500	200	30	10	40
Issaquah Coal Co.....	Issaquah.....	King.....	121,829	224	216	98	314
Seattle Electric Co.....	Renton.....	King.....	72,865	241	265	20	285
Fred Nolte Co.....	Cumberland.....	King.....	9,000	250	12	5	17
S. & S. R'y & Nav. Co.....	Ravensdale.....	King.....	63,578	250	150	75	225
Blue Canyon Co.....	Blue Canyon.....	Whatcom.....	8,200	300	28	6	34
Skagit Coal & Coke Co.....	Cokesdale.....	Skagit....	12,643	302	58	28	86
		Total..	2,466,190	5,191	3,945	881	4,826

Table No. 3.

COAL EXPORTED.

	<i>1900.</i>		<i>No. tons.</i>
From Tacoma.....			624,564
From Seattle.....			538,617
Total.....			1,163,181
	Value, \$3,664,020.15.		
	<i>1901.</i>		<i>No. tons.</i>
From Tacoma.....			636,106
From Seattle.....			492,419
Total.....			1,128,525
	Value, \$3,554,853.75.		
	<i>1902.</i>		<i>No. tons.</i>
From Tacoma.....			370,434
From Seattle.....			490,082
Total.....			860,516
	Value, \$2,710,625.40.		
An average value of export coal, at tide water, at \$3.15 per ton.			

LAND OFFICE STATISTICS.

Unappropriated, Unreserved, Reserved and Appropriated Lands in the several counties of the State by Land Districts.

OLYMPIA LAND DISTRICT.

NAME OF COUNTY.	<i>Area unappropriated and unreserved.</i>		<i>Reserved and appropriated.</i>	
	Surveyed, acres.	Unsurveyed, acres.	Reserved, acres.	Appropriated, acres.
Chehalis	10,189	7,888	363,122	861,801
Jefferson	4,185	.....	67,839	45,636
King	20,917	77,390	1,350	92,843
Kitsap	960	.....	.....	58,570
Lewis	2,960	5,920	75,000	91,620
Mason	16,960	6,640	162,347	428,933
Pacific	5,505	18,020	.....	65,695
Pierce	4,500	3,705	295,504	652,811
Thurston	4,775	3,080	1,360	468,805
Totals.....	70,951	122,143	966,522	2,766,714

VANCOUVER LAND DISTRICT.

Clarke	21,023	.....	5,897	375,240
Cowlitz	27,049	.....	47,248	652,133
Klickitat	46,738	16,469	37,650	767,143
Lewis	44,161	71,071	333,270	882,718
Pacific	61,807	10,019	933	430,739
Pierce .....	.....	.....	13,500	.....
Skamania	63,542	71,813	801,305	185,840
Wahkiakum	2,133	.....	640	177,227
Yakima .....	.....	.....	77,500	.....
Total	266,453	169,372	1,317,935	3,471,040

WATERVILLE LAND DISTRICT.

Chelan	380,356	656,093	736,440	345,385
Douglas	821,299	196,158	.....	1,587,543
Kittitas .....	.....	206,286	.....	.....
Okanogan	1,082,991	573,170	1,010,029	235,640
Totals.....	2,284,646	1,631,707	1,746,469	2,168,568

NORTH YAKIMA LAND DISTRICT.

Yakima	244,535	336,586	1,285,000	1,574,179
Douglas	109,937	19,760	.....	162,103
Franklin	6,500	.....	.....	.....
Kittitas	167,771	402,545	137,703	709,511
Lewis .....	.....	.....	.....	21,500
Totals..	528,743	758,891	1,422,703	2,467,453

SPOKANE FALLS LAND DISTRICT.

NAME OF COUNTY.	Area unappropriated and unreserved.		Reserved and appropriated.	
	Surveyed, acres.	Unsurveyed, acres.	Reserved, acres.	Appropriated, acres.
Adams.....	17,065			716,935
Douglas.....		1,500		
Ferry.....	34,456	616,866	729,431	66,247
Lincoln.....	74,014	4,448	700	1,411,088
Okanogan.....		138,223	136,260	17
Spokane.....	7,328	66,806		1,060,566
Stevens.....	487,245	997,153		1,020,102
Whitman.....	6,935			646,365
Totals.....	627,043	1,824,996	866,391	4,921,320

SEATTLE LAND DISTRICT.

Clallam.....	58,986	30,341	515,229	556,684
Island.....			2,193	127,527
Jefferson.....	17,590	33,740	586,139	345,891
King.....	1,218	79,350	462,025	575,287
Kitsap.....			8,214	182,286
Pierce.....			1,038	44,962
San Juan.....	3,230	None.	2,955	94,815
Skagit.....	26,982	49,139	628,726	466,153
Snohomish.....	3,061	35,440	606,935	458,204
Whatcom.....	16,850	11,029	959,640	418,161
Total.....	127,917	239,039	3,773,094	3,269,970

WALLA WALLA LAND DISTRICT.

Adams.....	36,433		271,304	178,263
Asotin.....	149,100	13,293	13,180	228,927
Columbia.....	6,799	176,458	117,200	275,543
Franklin.....	124,848		426,540	230,612
Garfield.....	9,844	85,108	75,474	282,074
Klickitat.....	146,471		202,791	150,238
Walla Walla.....	30,060		303,530	477,910
Whitman.....	18,091		255,182	427,227
Yakima.....	36,786		106,890	70,624
Totals.....	558,432	274,859	1,772,091	2,321,418

SUMMARY OF UNITED STATES LAND OFFICE STATISTICS, SHOWING TOTALS OF SURVEYED, UNSURVEYED, RESERVED AND APPROPRIATED LANDS IN THE VARIOUS LAND OFFICE DISTRICTS OF WASHINGTON.

LAND DISTRICT.	Surveyed, acres.	Unsurveyed, acres.	Reserved, acres.	Appropriated, acres.
Yakima.....	528,743	758,891	1,422,703	2,467,703
Vancouver.....	266,453	169,372	1,317,935	3,471,040
Spokane.....	627,043	1,824,996	866,391	4,921,320
Olympia.....	70,951	122,143	966,522	2,766,714
Seattle.....	127,917	239,039	3,773,094	3,269,970
Waterville.....	2,284,646	1,631,707	1,746,469	2,168,568
Walla Walla.....	558,434	274,859	1,772,091	2,321,418
Totals.....	4,464,187	5,021,007	11,865,205	21,386,483



CATTLE ON THE RANGE.



SHEEP ON THE RANGE.

IRRIGATION STATISTICS.

Table A.

NUMBER OF IRRIGATORS AND ACRES IRRIGATED IN 1889 AND 1900, WITH PERCENTAGES OF INCREASE, BY COUNTIES.

COUNTIES.	Number of Irrigators.			Number of Acres Irrigated.		
	1899	1889	Per cent. of increase.	1899	1889	Per cent. of increase.
The State.....	3,513	1,046	235.9	135,470	48,799	177.6
Adams.....	12			423		
Asotin.....	222	32	593.8	1,698	320	430.6
Chelan ¹	309			6,406		
Kittitas ¹	549	350	216.9	47,373	25,212	138.6
Okanogan ¹	251			6,377		
Clallam.....	16			127		
Columbia.....	25	15	66.7	440	139	216.5
Douglas.....	55	34	61.8	2,627	1,016	158.6
Ferry ²	16			625		
Stevens ²	104	66	81.8	1,926	1,350	89.0
Garfield.....	25	24	4.2	328	229	43.2
King.....	17			151		
Klickitat.....	151	71	112.7	1,235	1,702	827.4
Lincoln.....	94	12	350.0	1,069	288	349.2
Spokane.....	31	3	933.3	718	80	797.5
Walla Walla.....	231	121	90.9	6,100	2,809	117.2
Whitman.....	44	22	100.0	863	531	62.5
Yakima.....	1,123	293	283.3	47,588	15,129	214.5
All other counties.....	51	3	1,600.0	233	44	429.5
Indian reservations:						
Spokane.....	43			140		
Yakima.....	184			9,023		

¹ Chelan organized from parts of Kittitas and Okanogan in 1899.² Ferry organized from part of Stevens in 1899.³ Decrease.

Table C.

ACREAGE AND PRODUCTION OF ALL CROPS, AND OF IRRIGATED CROPS:
1899. ¹

CROPS.	Acreage.			Unit of measure.	Production.		
	Total.	Irrigated.	Per cent. irrigated.		Total.	Irrigated.	Per cent. irrigated
All crops.....	1,709,320	117,798	6.9				
Corn.....	9,665	1,579	16.3	Bushels.	200,976	43,650	21.7
Wheat.....	1,073,827	14,204	1.3	Bushels.	20,817,753	328,958	1.6
Oats.....	66,085	3,125	4.5	Bushels.	2,238,304	113,070	5.1
Barley.....	120,708	3,899	3.2	Bushels.	3,579,274	119,190	3.3
Rye.....	2,529	117	4.6	Bushels.	34,415	3,280	9.5
Wild, salt, or prairie grasses.....	46,150	6,638	14.4	Tons.	46,470	8,063	17.4
Millet and Hungarian grasses..	191	112	58.6	Tons.	319	226	70.8
Alfalfa or lucern.	34,763	28,161	81.0	Tons.	116,897	101,548	86.9
Clover.....	5,801	5,296	91.3	Tons.	12,680	11,944	94.2
Other tame and cultivated grasses.....	46,701	15,358	32.9	Tons.	65,056	25,708	39.5
Grains cut green for hay.....	213,939	11,308	5.3	Tons.	277,204	17,073	6.2
Forage ²	6,187	566	9.1	Tons.	3,642	1,239	14.3
Hops.....	2,203	2,162	98.1	Pounds.	2,934,830	2,914,280	99.3
Dry beans.....	212	48	22.6	Bushels.	2,142	645	30.1
Potatoes.....	13,397	2,809	21.0	Bushels.	1,761,855	446,530	25.3
Sweet potatoes....	27	8	29.6	Bushels.	2,147	821	38.2
Sorghum cane....	28	28	100.0	Tons.	82	82	100.0
Onions.....	321	146	45.5	Bushels.	73,992	34,854	47.1
Miscellaneous vegetables.....	7,846	3,759	47.9				
Small fruits.....	1,306	553	42.3	Quarts.	2,109,524	948,012	44.9
Orchard fruits ⁴	51,918	17,590	33.9	Bushels.	663,840	344,801	51.9
Grapes ⁴	263	205	77.9	Centals.	11,063	6,821	61.7
Other crops ⁵	2,303	127	5.5				

¹ East of Cascade mountains, including Spokane and Yakima Indian reservations.² Not including area of "duplicate forage crop" (cornstalks and strippings).³ Including cornstalks and corn strippings.⁴ Estimated from number of vines or trees.⁵ Including tobacco, nurseries, seeds, products from land under glass, and other crops not mentioned.

Table F.

VALUE OF CROPS PRODUCED ON IRRIGATED LAND, BY COUNTIES.

COUNTIES.	All crops.	Hay and forage.	Cereals.	Vegetables.	Orchard fruits.	Small fruits.	Other crops.
The State....	\$2,361,838	\$1,014,438	\$227,171	\$427,385	\$351,015	\$63,702	\$278,127
Adams	2,518	2,005	.....	355	258	.....	.....
Asotin	58,060	8,189	1,985	28,203	17,041	2,276	416
Chelan	159,046	54,810	7,792	47,759	42,685	4,973	1,027
Clallam.....	4,607	478	2,491	1,097	115	426	.....
Columbia	18,710	6,509	13	3,774	8,166	248	.....
Douglas	31,608	21,332	330	2,266	6,667	709	304
Ferry	15,044	11,462	15	3,349	48	170	.....
Franklin	2,465	1,556	20	472	417	.....	.....
Garfield.....	30,559	997	.....	3,689	23,675	1,206	1,042
King.....	29,527	117	.....	24,484	1,924	3,002	.....
Kittitas.....	301,864	305,004	129,881	44,320	17,663	4,996	.....
Klickitat.....	44,113	10,673	235	9,826	15,868	6,562	949
Lincoln	31,736	11,178	451	5,798	6,868	7,234	207
Okanogan.....	115,426	77,440	5,315	25,100	4,115	3,348	107
Skamania.....	1,702	158	.....	1,221	38	258	28
Spokane.....	48,201	4,159	.....	40,998	1,284	1,763	.....
Stevens.....	28,840	17,474	1,100	5,677	2,147	2,442	.....
Walla Walla..	179,873	80,900	11,820	43,374	23,691	14,801	5,287
Whitman	50,151	1,611	47	7,803	34,651	2,240	3,799
Yakima.....	1,004,242	398,386	65,726	126,147	142,773	6,249	264,961
All other counties	3,546	.....	.....	1,826	921	799	.....

FISHERIES STATISTICS.

TABULATED REPORT OF FISHING INDUSTRY, PUGET SOUND DISTRICT, YEAR ENDING DECEMBER 1, 1902.

VALUE OF CANNERIES AND FACTORIES, FISHING APPLIANCES AND CAPITAL USED IN OPERATION OF SAME.

	No.	Value.
Salmon canneries and factories operated.....	21	\$1,024,433 00
Salmon canneries and factories not operated.....	5	50,000 00
Crab canneries and factories operated.....	1	15,000 00
Clam canneries and factories operated.....	1	10,000 00
Sardine and herring canneries and factories operated.....	2	25,000 00
Capital used in operating.....	.....	1,795,600 00
Steamboats.....	41	322,200 00
Launches.....	13	30,000 00
Pile drivers.....	31	140,500 00
Scows.....	313	184,310 00
Fishing boats and dories.....	350	18,605 00
Pound nets operated.....	148	1,767,000 00
Pound net locations not operated.....	157	39,250 00
Purse seines.....	84	58,800 00
Drag seines.....	92	25,300 00
Gill nets.....	353	56,480 00
Set nets.....	461	19,855 00
Total.....	365	\$5,582,333 00

LABOR EMPLOYED IN OPERATION OF CANNERIES, FACTORIES, STEAM-BOATS, FISHING APPLIANCES, ETC.

HOW EMPLOYED.	Number Men.	Average annual earnings.	Total.
Canneries and factories, white labor.....	1,900	\$217 00	\$214,380 00
Canneries and factories, Chinese and Japanese	1,725	205 00	353,625 00
Canneries and factories, Indians	75	165 00	13,125 00
Steamboats.....	186	376 00	70,040 00
Launches.....	35	370 00	12,950 00
Pile drivers.....	303	223 00	67,570 00
Scows.....	193	300 00	57,900 00
Fishing boats and dories.....	193	300 00	57,900 00
Pound nets.....	760	300 00	228,000 00
Purse seines.....	672	400 00	268,800 00
Drag seines.....	276	300 00	82,800 00
Gill nets.....	706	300 00	211,800 00
Set nets.....	361	250 00	90,250 00
Fresh fish dealers.....	100	600 00	60,000 00
Clam and mussel fishing.....	100	300 00	30,000 00
Crab and shrimp fishing.....	90	275 00	24,750 00
Oyster industry.....	500	200 00	100,000 00
Total.....	8,265		\$1,943,890 00

FISH, CRABS AND CLAMS PACKED AND SALTED.

Variety	No. of Cases.	Value.
Sockeye and blueback.....	372,301	\$2,047,655 00
Chinook and springs.....	30,049	150,245 00
Silvers.....	85,817	429,085 00
Chums.....	93,492	467,460 00
Herring and smelt.....	10,000	47,500 00
Crabs.....	10,000	50,000 00
Total.....	8,000	48,000 00
Total.....	609,659	\$3,239,945 00

FRESH, SALT AND SMOKED FISH SHIPPED AND CONSUMED LOCALLY.

Variety—	No. of Pounds.	Value.
Salmon, fresh, salt and smoked.....	20,900,000	
Sturgeon.....	8,000	
Smelt, fresh.....	1,500,000	
Halibut, fresh.....	20,000,000	
Halibut, salt and smoked.....	50,000	
Cod, salt and fresh.....	250,000	
Sole.....	69,000	
Flounders.....	50,000	
Mackerel.....	15,000	
Trout.....	75,000	
Herring, salt, smoked and fresh.....	600,000	
Shad.....	20,000	
Catfish.....	5,000	
Total.....	43,532,000	\$1,798,900 00

SHELL FISH OUTPUT.

Variety—	Output.	Value.
Clams, sacks.....	30,000	
Mussels, sacks.....	500	
Crabs, dozen.....	40,000	
Shrimps, lbs.....	50,000	
Total.....	120,500	\$225,650 00

GUANO AND OIL OUTPUT.

	<i>Gals</i>	<i>Value.</i>
Three factories.....	50,000	\$25,000 00

TOTAL VALUE OF OUTPUT FOR 1902, PUGET SOUND DISTRICT.

Salmon packed.....	\$3,094,445 00
Fresh, salt and smoked fish.....	1,798,900 00
Shell fish.....	296,750 00
Guano, oil.....	25,000 00
Herring and smelt.....	47,500 00
Crabs.....	50,000 00
Clams.....	48,000 00
Oysters.....	168,000 00
Total.....	\$5,528,595 00

TABULATED REPORT OF FISHING INDUSTRY, COLUMBIA RIVER DISTRICT, YEAR ENDING DECEMBER 1, 1902.

VALUE OF CANNERIES AND FACTORIES, FISHING APPLIANCES AND CAPITAL USED IN OPERATION OF SAME.

	<i>No.</i>	<i>Values.</i>
Canneries and factories, operated.....	5	\$160,000 00
Canneries and factories, not operated.....	3	15,000 00
Capital used in operating.....	5	225,000 00
Steamboats.....	2	41,000 00
Launches.....	11	33,000 00
Pile drivers.....	2	2,400 00
Scows.....	12	8,200 00
Fishing boats and dories.....	406	40,600 00
Pound nets operated.....	350	280,000 00
Pound net locations, not operated.....	16	12,800 00
Wheels.....	29	8,000 00
Drag seines.....	52	8,500 00
Gill nets.....	406	64,960 00
Set nets.....	85	3,400 00
Total.....		\$896,060 00

LABOR EMPLOYED IN OPERATION OF CANNERIES, FACTORIES, STEAMBOATS, FISHING APPLIANCES, ETC.

HOW EMPLOYED.	<i>Number Men.</i>	<i>Average season's earnings.</i>	<i>Value.</i>
Canneries and factories, white labor.....	30	\$400 00	\$ 15,600 00
Canneries and factories, Chinese and Japanese	210	160 00	33,600 00
Steamboats.....	88	300 00	2,400 00
Launches.....	114	300 00	4,200 00
Pile drivers.....	5	150 00	750 00
Scows.....	5	300 00	1,500 00
Pound nets.....	350	275 00	96,250 00
Wheels.....	48	250 00	12,000 00
Drag seines.....	260	200 00	52,000 00
Gill nets.....	812	300 00	474,650 00
Set nets.....	85	150 00	12,750 00
Total.....	1,836		\$474,650 00

SALMON PACKED AND SALTED.

	<i>No. of Cases.</i>	<i>Value.</i>
Sockeye or blueback.....	4,235	\$ 21,175 00
Chinook or springs.....	77,910	411,445 00
Silvers.....	4,435	18,820 00
Chums.....	10,233	40,932 00
Total.....	96,833	\$492,372 00

SALT, FRESH AND SMOKED FISH SHIPPED AND CONSUMED LOCALLY.

	<i>Pounds.</i>	<i>Value.</i>
*Salmon, fresh.....	3,200,000	
Salmon, salt and smoked.....	280,000	
Smelt.....	450,000	
Trout of all kinds.....	24,000	
Sturgeon.....	11,000	
Shad.....	240,000	
Cod.....	29,000	
Catfish.....	8,000	
All others.....	34,000	
Total.....	4,276,000	\$256,560 00

*Caught in Washington waters, and shipped into the state of Oregon.

	<i>Sacks.</i>	<i>Value.</i>
Clams.....	2,600	\$3,000 00

TOTAL VALUE OF OUTPUT FOR 1902, COLUMBIA RIVER DISTRICT.

Salmon packed.....	\$492,372 00
Fresh, salt and smoked fish.....	256,560 00
Shell fish.....	3,000 00
Total.....	\$751,932 00

TABULATED REPORT OF FISHING INDUSTRY, WILLAPA HARBOR DISTRICT, YEAR ENDING DECEMBER 1, 1902.

VALUE OF CANNERIES AND FACTORIES, FISHING APPLIANCES AND CAPITAL USED IN OPERATION OF SAME.

	<i>No.</i>	<i>Value.</i>
Salmon canneries and factories, operated.....	3	\$ 40,000 00
Clam canneries and factories, operated.....	1	1,000 00
Capital used in operating.....	..	117,000 00
Launches.....	3	7,500 00
Pile drivers.....	1	300 00
Scows.....	2	1,200 00
Fishing boats and dories.....	29	1,450 00
Pound nets, operated.....	48	28,800 00
Pound net locations, not operated.....	4	2,400 00
Gill nets.....	2	300 00
Set nets.....	22	550 00
Total.....	..	\$200,500 00

LABOR EMPLOYED IN OPERATION OF CANNERIES, FACTORIES, STEAM-BOATS, FISHING APPLIANCES, ETC.

HOW EMPLOYED.	<i>Number Men.</i>	<i>Average season's earnings.</i>	<i>Total.</i>
Salmon canneries and factories, white.....	36	\$300 00	\$10,800 00
Clam canneries and factories, white labor....	4	300 00	1,200 00
Canneries and factories, Chinese.....	79	160 00	12,640 00
Launches.....	6	260 00	1,560 00
Pile drivers.....	5	100 00	500 00
Scows.....	1	300 00	300 00
Fishing boats and dories.....	4	150 00	600 00
Pound nets.....	60	200 00	12,000 00
Gill nets.....	4	300 00	1,200 00
Set nets.....	2	150 00	3,000 00
Total.....	221		\$44,100 00

SALMON PACKED AND SALTED.

	<i>No. of Cases.</i>	<i>Value.</i>
Chinook.....	5,836	\$ 29,180 00
Silver.....	9,128	41,076 00
Chums.....	24,528	97,112 00
Total.....	39,492	\$167,368 00

FRESH, SALT AND SMOKED FISH SHIPPED AND CONSUMED LOCALLY.

	<i>Pounds.</i>	<i>Value.</i>
Salmon, fresh, salt and smoked.....	360,000	
All other kinds.....	30,000	
Total.....	390,000	\$19,500 00

SHELL FISH.

	<i>Value.</i>
Oysters.....	\$93,750 00
Clams.....	3,225 00
Crabs.....	2,500 00
Total.....	\$99,475 00

TOTAL VALUE OF OUTPUT FOR 1902, WILLAPA HARBOR DISTRICT.

Salmon, packed.....	\$167,368 00
Fresh, salt and smoked fish.....	19,500 00
Shell fish.....	99,475 00
Total.....	286,343 00

TABULATED REPORT OF FISHING INDUSTRY, GRAYS HARBOR DISTRICT, YEAR ENDING DECEMBER 1, 1902.

VALUE OF CANNERIES AND FACTORIES, FISHING APPLIANCES, AND CAPITAL USED IN OPERATION OF SAME.

	No.	Value.
Canneries, operated.....	1	\$50,000 00
Canneries, not operated.....	1	10,000 00
Capital used in operating.....	..	50,000 00
Steamboats.....	1	2,500 00
Launches.....	1	2,500 00
Pile drivers.....	1	300 00
Scows.....	1	200 00
Fishing boats and doris.....	28	1,400 00
Pound nets operated.....	17	17,000 00
Gill mets.....	53	5,300 00
Set nets.....	65	1,625 00
Total.....	..	\$140,325 00

LABOR EMPLOYED IN OPERATION OF CANNERIES, FACTORIES, STEAMBOATS, FISHING APPLIANCES, ETC.

HOW EMPLOYED.	Number Men.	Average season's earnings.	Total
Canneries and factories, white labor.....	10	\$300 00	\$ 3,000 00
Canneries and factories, Chinese and Japanese.....	41	160 00	6,560 00
Steamboats.....	3	250 00	750 00
Launches.....	2	250 00	500 00
Pile drivers.....	5	100 00	500 00
Scows.....	1	200 00	200 00
Pound nets.....	34	150 00	5,100 00
Gill nets.....	106	150 00	15,900 00
Set nets.....	65	.....	6,500 00
Total.....	373	.....	39,010 00

SALMON PACKED AND SALTED.

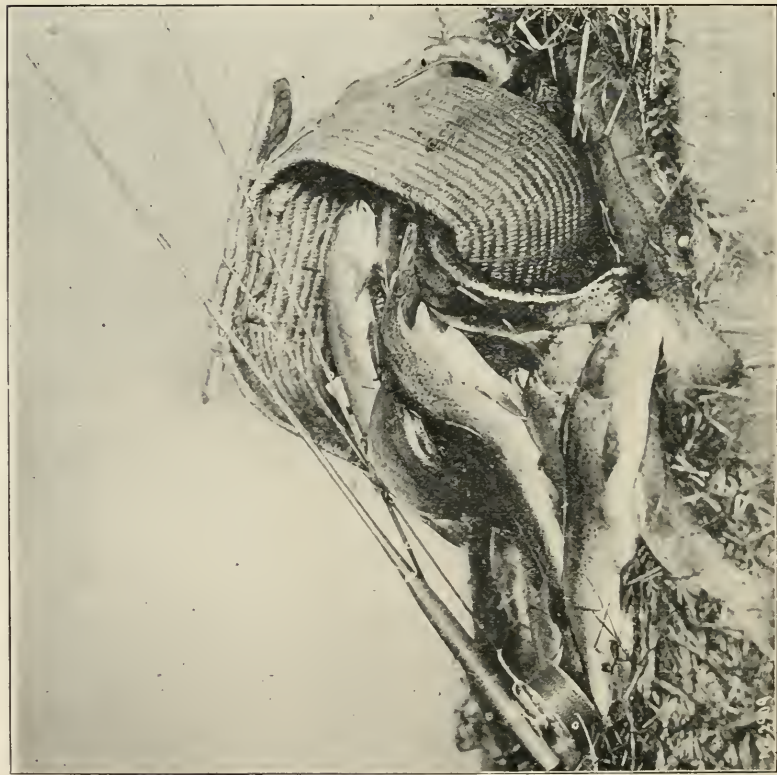
	No. of Cases,	Value.
Chinook.....	4,000	\$20,000 00
Silvers.....	10,000	45,000 00
Chums.....	17,500	70,000 00
Total.....	31,500	\$135,000 00

FRESH, SALT AND SMOKED FISH SHIPPED AND CONSUMED LOCALLY.

	Pounds.	Value.
Salmon, fresh, salt and smoked.....	600,000	.....
Sturgeon.....	2,000	.....
All other kinds.....	20,000	.....
Total.....	622,000	\$30,000 00

TOTAL VALUE OF OUTPUT FOR 1902, GRAYS HARBOR DISTRICT.

Solmon packed.....	\$135,000 00
Fresh, salt and smoked fish.....	30,000 00
Total.....	\$165,000



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HUNTING AND FISHING IN WASHINGTON.

EASTERN OYSTERS PLANTED PUGET SOUND DISTRICT.

Samish Bay.

	<i>Value.</i>
Four carloads.....	\$4,800 00

OUTPUT OYSTERS WILLAPA HARBOR DISTRICT.

Willapa Harbor.

	<i>Sacks.</i>	<i>Value.</i>
Natives.....	35,000	\$78,750 00
Eastern.....	2,000	15,000 00
Total.....	37,000	\$93,750 00

NATIVE SEEDS TAKEN FROM NATURAL BEDS. 1902.

	<i>Value.</i>
175,000 sacks, at 20c per sack.....	\$35,000 00
18 carloads of Eastern oysters planted.....	21,600 00

CAPITAL EMPLOYED IN OYSTER INDUSTRY, PUGET SOUND DISTRICT.

	<i>Value.</i>
20 plungers (boats).....	\$10,000 00
5 launches.....	10,000 00
4 carloads of Eastern oysters planted.....	4,800 00
Total.....	\$24,800 00

CAPITAL EMPLOYED IN OYSTER INDUSTRY, WILLAPA HARBOR.

	<i>Value.</i>
25 plungers (boats).....	\$12,500 00
7 launches.....	14,000 00
18 carloads of Eastern oysters planted.....	21,000 00
Total.....	\$47,500 00

TOTAL OUTPUT OF OYSTERS.

	<i>Sacks.</i>	<i>Value.</i>
Puget Sound district.....	42,000	\$158,000 00
Willapa harbor.....	37,000	93,750 00
Willapa harbor.....	175,000	35,000 00
Total.....	254,000	\$296,750 00

GENERAL SUMMARY OF THE FISHERIES OF THE STATE OF
WASHINGTON, FOR THE YEAR 1902, CAPITAL AND
LABOR EMPLOYED, EARNINGS OF LABOR
EMPLOYED, AND VALUE OF OUTPUT.

CAPITAL EMPLOYED.

Puget Sound.....	\$5,582,333 00
Columbia river.....	896,060 00
Willapa harbor.....	200,500 00
Grays harbor.....	140,325 00

NUMBER OF PERSONS EMPLOYED.

Puget sound.....	8,265
Columbia river.....	1,836
Willapa harbor.....	221
Grays harbor.....	373
Total.....	10,695

EARNINGS OF LABOR EMPLOYED.

Puget sound.....	\$1,948,890 00
Columbia river.....	474,630 00
Willapa harbor.....	44,100 00
Grays harbor.....	39,010 00
Total.....	\$2,501,650 00

VALUE OF OUTPUT.

Puget sound.....	\$5,528,595 00
Columbia river.....	751,932 00
Willapa harbor.....	286,343 00
Grays harbor.....	165,000 00
Total.....	\$6,731,870 00

The output of the Oregon canneries on the Columbia river amounts to 458,458 cases of salmon.

OUTPUT NATIVE OYSTERS, PUGET SOUND.

	<i>Sacks.</i>	<i>Capital invested.</i>	<i>Value.</i>
Oyster Bay.....	25,000		\$100,000 00
Little Squim.....	1,000		4,000 00
Mud Bay.....	3,000		12,000 00
Squim Bay.....	6,000		24,000 00
Other places.....	7,000		28,000 00
Total.....	42,000	\$63,000 00	\$168,000 00

ASSESSED VALUATION OF REAL AND PERSONAL PROPERTY IN WASHINGTON FOR 1903.

COUNTIES.	Total number of acres of land exclusive of town and city lots.	Total number of acres of improved land.	Valuation of land including improvements.	Valuation of improvements on land, town and city lots.	Valuation of land, town and city lots including improvements.	Valuation of personal property.	Valuation of railroad tracks.	Total valuation of real and personal property including railroad track.
1 Adams	795,594	293,845	\$2,473,587	\$554,092	\$3,027,679	\$1,115,361	\$131,113	\$4,574,153
2 Asotin	140,082	30,390	515,282	169,920	685,152	493,007	.....	1,178,159
3 Bhehalis	781,047	8,833	4,690,647	906,585	5,597,182	1,503,791	411,238	7,512,211
4 Chelan	337,917	9,845	1,020,308	290,205	1,310,513	500,786	463,185	2,274,484
5 Chlallam	337,918	7,828	2,105,562	176,524	2,282,086	198,695	.....	2,480,781
6 Clark	320,514	36,410	722,679	722,679	3,297,449	171,372	.....	4,080,850
7 Columbia	314,579	144,259	2,082,504	647,218	2,729,722	1,014,011	412,019	4,155,752
8 Cowlitz	513,179	26,648	2,677,210	438,585	3,105,795	243,103	.....	3,750,545
9 Douglas	1,207,422	227,636	3,066,155	352,836	3,408,991	1,206,587	611,100	5,226,578
10 Ferry	7,799	183	399,462	119,382	478,799	477,022	116,688	1,072,519
11 Franklin	416,292	10,234	462,681	28,184	490,215	391,145	422,006	1,363,366
12 Garfield	283,578	110,595	1,383,751	363,650	1,747,401	480,402	87,785	2,321,988
13 Island	130,711	8,014	819,084	115,613	934,697	75,275	.....	1,009,972
14 Jefferson	180,175	3,418	1,020,700	335,551	1,331,251	246,277	54,089	1,651,615
15 King	714,856	37,793	3,708,643	18,567,360	56,276,003	12,834,238	1,918,696	71,078,937
16 Kitsap	215,537	4,932	1,320,494	189,754	1,510,248	478,709	.....	1,988,957
17 Klitchas	532,150	45,801	1,921,495	804,075	2,746,570	1,150,924	587,657	4,485,151
18 Kltohtat	799,928	117,705	1,584,505	481,063	2,065,658	850,804	91,224	3,007,686
19 Lewis	789,304	33,185	4,210,019	513,203	4,723,222	629,833	395,970	5,749,025
20 Lincoln	1,140,392	373,139	5,941,325	963,589	6,910,914	2,369,981	955,610	10,266,505
21 Mason	372,147	2,598	1,106,422	78,570	1,234,992	131,113	113,318	1,509,423
22 Okanogan	49,566	13,357	1,411,675	162,843	304,518	742,674	.....	1,047,192
23 Pacific	398,916	2,100	1,851,587	192,270	2,053,857	371,889	203,886	2,619,642
24 Pierce	607,314	21,122	16,285,571	6,891,140	23,176,711	4,932,105	1,086,766	29,195,582
25 San Juan	81,483	8,963	387,787	151,315	539,102	160,169	699,271	1,509,423
26 Skagit	399,144	36,438	3,941,575	711,315	4,652,608	1,240,688	674,539	6,567,835
27 Skamania	93,927	2,968	375,127	33,167	408,294	92,788	3,960	505,042
28 Snohomish	231,582	27,175	5,894,972	1,572,931	7,467,777	2,297,156	1,230,371	10,993,304
29 Spokane	919,159	247,359	14,374,423	8,912,731	23,287,154	6,674,916	31,469,210	31,469,210
30 Stevens	630,688	42,791	1,788,648	436,065	2,214,713	1,043,351	741,738	3,999,802
31 Thurston	305,629	12,745	1,990,828	808,562	2,849,380	194,069	458,614	4,254,003
32 Wahakikum	130,929	2,482	470,717	89,990	500,307	154,576	.....	714,883
33 Walla Walla	628,049	*365,820	2,096,745	2,096,745	7,646,326	2,460,494	1,463,899	11,570,719
34 Whatcom	322,629	31,261	5,895,411	1,744,229	7,639,640	2,087,393	737,732	10,464,765
35 Whitman	1,160,232	688,610	8,709,059	2,324,320	11,033,379	2,865,872	1,540,803	13,440,058
Yakima	1,054,151	65,368	3,760,049	1,235,116	4,995,165	1,138,772	692,971	6,826,968
Total	17,401,758	3,116,830	\$150,562,050	\$54,196,950	\$204,699,000	\$54,450,312	\$17,839,257	\$276,988,769

*Increased by State Board 117,000 acres.

ASSESSED VALUATION OF LIVE STOCK IN WASHINGTON, FOR 1903.

COUNTIES.	Horses, Mules and Asses.			Cattle.			Sheep.			Hogs.		
	No.	Aver- age value.	Value.	No.	Aver- age value.	Value.	No.	Aver- age value.	Value.	No.	Aver- age value.	Value.
1 Adams.....	12,415	\$15 00	\$186,225	10,041	\$16 00	\$160,656	23,736	\$2 00	\$47,472	4,458	\$3 00	\$13,359
2 Asotin.....	4,380	15 00	65,700	9,117	16 00	145,872	42,448	2 00	84,896	3,290	3 00	9,870
3 Chehalis.....	1,947	30 00	58,410	6,693	16 00	139,088	8,088	2 00	6,136	1,458	3 00	4,374
4 Cowlitz.....	2,322	20 00	46,440	3,643	16 00	61,440	7,928	2 00	8,166	5,660	3 00	2,271
5 Chittam.....	1,011	25 00	25,025	4,643	16 00	74,288	2,928	2 00	5,856	660	3 00	1,980
6 Clarke.....	3,327	30 00	99,810	13,234	16 00	211,744	2,575	2 00	5,150	3,035	3 00	9,105
7 Columbia.....	8,179	25 00	204,475	9,327	16 00	149,232	30,053	2 00	60,186	6,736	3 00	20,208
8 Cowlitz.....	1,079	30 00	32,370	6,511	16 00	104,656	1,097	2 00	2,194	1,123	3 00	3,369
9 Douglas.....	12,780	20 00	255,600	23,032	16 00	368,512	40,290	2 00	80,580	2,892	3 00	8,676
10 Ferry.....	1,243	25 00	31,075	1,378	16 00	22,048	9,002	2 00	18,004	320	3 00	960
11 Franklin.....	8,462	15 00	51,930	11,857	16 00	117,372	44,925	2 00	89,850	1,009	3 00	3,027
12 Garfield.....	3,783	20 00	75,660	11,574	16 00	185,184	2,930	2 00	31,666	1,809	3 00	5,427
13 Island.....	705	30 00	21,150	2,246	16 00	35,936	1,930	2 00	5,860	759	3 00	2,277
14 Jefferson.....	474	20 00	9,480	2,688	16 00	33,408	680	2 00	1,360	228	3 00	684
15 King.....	6,776	30 00	203,280	15,708	16 00	251,238	3,477	2 00	6,954	1,949	3 00	5,847
16 Kitsap.....	22,950	25 00	573,750	2,584	16 00	41,344	1,120	2 00	2,240	334	3 00	1,002
17 Klittas.....	4,612	25 00	115,300	18,468	16 00	295,488	50,646	2 00	101,292	2,534	3 00	7,602
18 Klittak.....	6,258	20 00	124,760	12,997	16 00	207,952	93,765	2 00	187,530	4,049	3 00	12,147
19 Lewis.....	3,763	25 00	94,075	16,217	16 00	259,472	5,564	2 00	11,128	7,182	3 00	21,546
20 Lincoln.....	18,414	25 00	460,850	20,310	16 00	324,960	1,174	2 00	2,348	6,480	3 00	19,440
21 Mason.....	295	20 00	5,900	1,239	16 00	19,842	1,449	2 00	2,898	1,122	3 00	3,366
22 Okanogan.....	6,942	20 00	138,840	16,411	16 00	262,576	28,770	2 00	57,540	1,725	3 00	5,175
23 Pacific.....	515	30 00	15,450	4,108	16 00	65,728	610	2 00	1,220	214	3 00	642
24 Pierce.....	5,217	30 00	156,510	13,403	16 00	214,448	1,810	2 00	3,620	2,172	3 00	6,516
25 San Juan.....	752	30 00	22,560	2,290	16 00	36,640	8,343	2 00	16,686	471	3 00	1,413
26 Skagit.....	3,139	30 00	94,170	9,011	16 00	144,176	3,951	2 00	7,902	1,741	3 00	5,223
27 Skomania.....	333	25 00	8,325	1,410	16 00	23,040	339	2 00	6,780	138	3 00	414
28 Snohomish.....	3,847	30 00	115,410	11,858	16 00	189,728	2,829	2 00	5,658	1,487	3 00	4,461
29 Spokane.....	12,844	25 00	321,100	20,732	16 00	331,712	1,221	2 00	2,442	7,607	3 00	22,821
30 Stevens.....	6,194	20 00	123,880	12,750	16 00	202,200	1,172	2 00	2,344	2,756	3 00	8,268
31 Thurston.....	1,643	30 00	49,290	8,394	16 00	133,664	1,368	2 00	2,736	1,346	3 00	4,038
32 Wankiam.....	1,364	25 00	34,100	2,941	16 00	47,056	2,411	2 00	4,822	400	3 00	1,200
33 Walla Walla.....	11,190	20 00	223,800	10,191	16 00	163,057	37,724	2 00	75,448	6,976	3 00	20,928
34 Whatcom.....	2,850	30 00	85,500	7,840	16 00	125,440	4,882	2 00	9,764	1,473	3 00	4,419
35 Whitman.....	28,354	25 00	708,850	45,214	16 00	723,424	61,341	2 00	122,682	25,102	3 00	75,306
36 Yakima.....	7,441	20 00	148,820	19,388	16 00	309,408	153,228	2 00	306,456	2,065	3 00	6,195
Totals.....	189,243	.....	\$4,342,270	380,295	.....	\$6,082,010	687,724	.....	\$1,375,450	105,738	.....	\$317,214

BREEDERS OF THOROUGHBRED AND HIGH GRADE STOCK.

HORSES.

<i>Name.</i>	<i>Residence.</i>	<i>Breed.</i>
HON. A. T. VAN DE VANTER....	Seattle.....	Trotters and Pacers.
ARCHIE R. GALBRAITH.....	Spokane.....	Percherons, Clydesdales, Hackneys and Suffolks.
M. C. GRAY.....	Pullman.....	

CATTLE.

GEO. W. MCLEAN.....	Mt. Vernon.....	Shorthorns.
METSKER & KLEMGARD.....	Pullman.....	Shorthorns.
M. C. GRAY.....	Pullman.....	Shorthorns.
W. C. GOODMAN.....	Walla Walla.....	Shorthorns.
GEO. W. CHUTES.....	Sunnyside.....	Shorthorns.
H. W. FISK.....	Prosser.....	Shorthorns.
NELSON RICH.....	Prosser.....	Shorthorns.
CAPT. DUNN.....	Parker Bottom.....	Shorthorns.
FRED BROOKER.....	North Yakima.....	Shorthorns.
J. E. SHANNON.....	North Yakima.....	Pole-Durham.
— HEDGES.....	North Yakima.....	Pole-Durham.
FRANK P. STUMP.....	North Yakima.....	Red-Pole.
R. O. DUNBAR & SON.....	Olympia.....	Red-Pole.
L. R. COGSWELL.....	Chehalis.....	Red-Pole.
R. F. PADGIT.....	North Yakima.....	Pole-Angus.
A. J. SPLAWN.....	North Yakima.....	Pole-Angus and Herefords.
A. M. STEVENS.....	Ellensburg.....	Jerseys.
MORRISON & RICE.....	Monroe.....	Jerseys.
RUCKER BROS.....	Everett.....	Jerseys.
PECHTER & JANECK.....	North Yakima.....	Jerseys.
L. V. MCWHORTER.....	North Yakima.....	Devons.
F. A. FRENCH.....	North Yakima.....	Brown-Swiss.
WM. TODD & SON.....	North Yakima.....	Holsteins.
HAZLEWOOD CO.....	Spokane.....	Holsteins.

HOGS.

GEO. D. MCLEAN.....	Mt. Vernon.....	Berkshires.
HAZLEWOOD CO.....	Spokane.....	

U. S. TREASURY STATISTICS.

Values of imports and exports as reported for the Customs District of Puget Sound during the year ending June 30, 1908:

PLACE.	<i>Imports.</i>	<i>Exports.</i>	<i>Customs Receipts.</i>
Port Townsend.....	\$ 59,861	\$ 2,113,257	\$ 34,879 77
Tacoma.....	2,527,974	15,633,138	360,303 90
Seattle.....	8,293,945	11,861,713	565,956 28
Everett.....	208,279	12,172	29,970 11
Whatcom.....	86,541	65,126	9,894 50
Blaine.....	190,719	601,602	7,457 85
Port Angeles.....	963	208,522	2,609 20
Northport.....	121,802	566,596	4,385 47
Roche Harbor.....	3,514	32,599	294 19
Aberdeen.....	529	302,147	536 04
Anacortes.....	5,705	21,946	420 95
Sumas.....	161,272	871,015	11,039 08
Danville.....	16,125	91,556	1,908 28
Friday Harbor.....	14	10,409	115 92
South Bend.....		8,704	2 50
Totals.....	\$12,177,243	\$32,400,552	\$1,027,774 04

<i>Postoffice.</i>	<i>County.</i>
Coupeville	Island
Covello.....	Columbia
Covington.....	King
Cowiche.....	Yakima
Cowlitz.....	Lewis
Crabcreek.....	Lincoln
Craige.....	Asotin
Crego.....	Lewis
Creston.....	Lincoln
Crystalsprings.....	Kitsap
Cromwell.....	Pierce
Cumberland.....	King
Cunningham.....	Adams
Curby.....	Spokane
Curlew.....	Ferry
Curtis.....	Lewis
Cusick.....	Stevens
Custer.....	Whatcom
Cypress.....	Skagit

D.

Daisy.....	Stevens
Dalkena.....	Stevens
Damon.....	Chehalis
Danville.....	Ferry
Darrington.....	Snohomish
Dartford.....	Spokane
Davenport	Lincoln
Dayton	Columbia
Decatur.....	San Juan
Deerpereek.....	Spokane
Deerpriver.....	Wahkiakum
Deerharbor.....	San Juan
Deerpark.....	Spokane
Deertrace.....	Stevens
Delight.....	Adams
Delphi.....	Thurston
Delta.....	Whatcom
Deming.....	Whatcom
Derby.....	King
Des Moines.....	King
Detroit.....	Mason
Dewatto.....	Mason
Dewey.....	Skagit
Diamond.....	Whitman
Deringer.....	Pierce
Dixie.....	Walla Walla
Dockton.....	King
Dodd.....	Asotin
Doebay.....	San Juan
Dole.....	Clarke
Dot.....	Klickitat
Doty.....	Lewis
Douglas.....	Douglas
Dryad.....	Lewis
Duckabush.....	Jefferson
Durcan.....	Spokane
Dungeness.....	Clallam
Dunlap.....	King
Dunn.....	Stevens
Dusty.....	Whitman
Dyer.....	Douglas

E.

Eaglecliff.....	Wahkiakum
Eagleton.....	Lewis
Earl.....	Lincoln
East Clallam.....	Clallam
Easton.....	Kittitas
Eastsound.....	San Juan
East Spokane.....	Spokane
Eatonville.....	Pierce
Echo.....	Stevens
Edgecomb.....	Snohomish
Edison.....	Skagit
Edmonds.....	Snohomish
Edwall.....	Lincoln
Egypt.....	Lincoln

<i>Postoffice.</i>	<i>County.</i>
Ehrlich.....	Skagit
Elbe.....	Pierce
Elberton.....	Whitman
Eldore.....	Kitsap
Elgin.....	Pierce
Elk.....	Spokane
Ellensburg	Kittitas
Elliot.....	King
Elsworth.....	Clarke
Elma.....	Chehalis
Eltopia.....	Franklin
Endicott.....	Whitman
Enterprise.....	Whatcom
Entiat.....	Chelan
Enumelaw.....	King
Ephrata.....	Douglas
Ethel.....	Lewis
Etna.....	Clarke
Eufaula.....	Cowlitz
Eureka.....	Walla Walla
Evans.....	Stevens
Everett	Snohomish
Evergreen.....	Jefferson
Everson.....	Whatcom
Exa.....	Clallam
Excelsior.....	Whatcom
Expansion.....	Klickitat

F.

Fairfax.....	Pierce
Fairfield.....	Spokane
Fairhaven.....	Whatcom
Fall City.....	King
Fallon.....	Whitman
Farris.....	Chelan
Farmer.....	Douglas
Farmington.....	Whitman
Felida.....	Clarke
Ferndale.....	Whatcom
Fernhill.....	Pierce
Fidalgo.....	Skagit
Fir.....	Skagit
Firwood.....	Klickitat
Fisher.....	Clarke
Fletcher.....	Adams
Florence.....	Snohomish
Foothill.....	Spokane
Forest.....	Lewis
Forks.....	Clallam
Fort Canby.....	Pacific
Fort Casey.....	Island
Fort Flagler.....	Jefferson
Fort Simcoe.....	Yakima
Fort Steilacoom.....	Pierce
Fortson.....	Snohomish
Frances.....	Pacific
Frankfort.....	Pacific
Franklin.....	King
Fredouia.....	Skagit
Freeland.....	Island
Freeman.....	Spokane
Friday Harbor	San Juan
Frontier.....	Stevens
Fruitland.....	Stevens
Fulda.....	Klickitat
Fuhrman.....	Klickitat

G.

Garfield.....	Whitman
Garnors.....	Clarke
Gatic.....	Thurston
Geneva.....	Whatcom
Georgetown.....	King
Gertrude.....	Pierce
Getchell.....	Snohomish
Gettysburg.....	Clallam
Gifford.....	Stevens

<i>Postoffice.</i>	<i>County.</i>
Gig Harbor.....	Pierce
Gilmer.....	Klickitat
Glencove.....	Pierce
Gleneden.....	Lewis
Glenwood.....	Klickitat
Goldbar.....	Snohomish
Goldbasin.....	Snohomish
Goldendale.....	Klickitat
Gordon.....	Douglas
Goshen.....	Whatcom
Gould City.....	Garfield
Govan.....	Lincoln
Graham.....	Pierce
Granddalles.....	Klickitat
Grandmound.....	Thurston
Granite Falls	Snohomish
Grant.....	Mason
Granville.....	Chehalis
Gray.....	Stevens
Grays River.....	Wahkiakum
Griffith.....	Adams
Grove.....	Mason
Gross.....	Columbia
Gnemes.....	Skagit
Gnler.....	Klickitat

H.

Hadlock.....	Jefferson
Hamilton.....	Skagit
Hanson Ferry.....	Asotin
Harper.....	Kitsap
Harmony.....	Lewis
Harrington.....	Lincoln
Harstine Island.....	Mason
Hartford.....	Snohomish
Hartland.....	Klickitat
Hartline.....	Douglas
Harts.....	Pierce
Harvey.....	Stevens
Hatton.....	Adams
Hay.....	Whitman
Hayes.....	Clarke
Hazard.....	Spokane
Hellgate.....	Lincoln
Hesseltine.....	Lincoln
Highland.....	Spokane
Hillhurst.....	Pierce
Hillsdale.....	Whatcom
Hillyard.....	Spokane
Hobart.....	King
Hockinson.....	Clarke
Holly.....	Kitsap
Home.....	Pierce
Homevalley.....	Skamania
Hoodsport.....	Mason
Hooper.....	Whitman
Hoquiam.....	Chehalis
Hot Springs.....	King
Houghton.....	King
Howard.....	Douglas
Humpulips.....	Chehalis
Huit.....	Klickitat
Huntly.....	Whitman
Hunters.....	Stevens
Huntsville.....	Columbia
Hurn.....	Lewis
Husum.....	Klickitat

I.

Ila.....	Garfield
Ihwaco.....	Pacific
Index.....	Snohomish
Inglewood.....	King
Iona.....	Stevens
Irontdale.....	Jefferson
Island.....	Island
Issaquah.....	King

Postoffice. *J.* *County.*
 Jersey.....Klickitat
 Johnson.....Whitman
 Jordan.....Snohomish
 Juanita.....King
 Junction.....Jefferson
 Juno.....Chehalis

K.

Kalama.....Cowlitz
 Kahlatas.....Franklin
 Kamilche.....Mason
 Kanaskat.....King
 Kangley.....King
 Kapowin.....Pierce
 Keller.....Ferry
 Kelso.....Cowlitz
 Kendall.....Whatcom
 Kennewick.....Yakima
 Kent.....King
 Kerns.....Cowlitz
 Kettle Falls.....Stevens
 Keystone.....Adams
 Keyport.....Kitsap
 Kingston.....Kitsap
 Kiona.....Yakima
 Kipling.....Okanogan
 Kirkland.....King
 Knab.....Lewis
 Knappton.....Pacific
 Knowlton.....Okanogan
 Krupp.....Douglas
 Kosmas.....Lewis

L.

Lacenter.....Clarke
 Lacey.....Thurston
 Laconner.....Skagit
 Lacrosse.....Whitman
 Ladu.....Cowlitz
 Lake.....Asotin
 Lakebay.....Pierce
 Lake Cushman.....Mason
 Lakeside.....Chelan
 Lake Tapps.....Pierce
 Lakeview.....Pierce
 Lamar.....Walla Walla
 Lamona.....Lincoln
 Langley.....Island
 Larchmont.....Pierce
 Larene.....Lincoln
 Latah.....Spokane
 Laurier.....Ferry
 Lawrence.....Whatcom
 Lawton.....Snohomish
 Leahy.....Douglas
 Leavenworth.....Chelan
 Lebam.....Pacific
 Leber.....Pierce
 Leland.....Jefferson
 Lemolo.....Whatcom
 Lenora.....Stevens
 Leon.....Adams
 Lester.....King
 Lewisville.....Clarke
 Lexington.....Cowlitz
 Liberty.....Kittitas
 Libby.....Okanogan
 Licking.....Whatcom
 Lincoln.....Douglas
 Lind.....Adams
 Lisabeula.....King
 Lithow.....Cowlitz
 Littlefalls.....Lewis
 Littell.....Lewis
 Littlerock.....Thurston
 Lochston.....Snohomish
 Locka.....Stevens
 London.....Chehalis

Postoffice. *County.*
 Longbeach.....Pacific
 Longbranch.....Pierce
 Lookout.....Skagit
 Loomis.....Okanogan
 Loonlake.....Stevens
 Lopez.....San Juan
 Lott.....Lincoln
 Lowell.....Snohomish
 Lucas.....Klickitat
 Luzeone.....Chelan
 Lyle.....Klickitat
 Lyman.....Skagit
 Lynden.....Whatcom

M.

McCain.....King
 McCormick.....Lewis
 McDonald.....Clallam
 McGowan.....Pacific
 McMillin.....Pierce
 McMurray.....Skagit
 Mabton.....Yakima
 Machias.....Snohomish
 Macklin.....Pierce
 Malaga.....Chelan
 Malott.....Okanogan
 Maltby.....Snohomish
 Manette.....Kitsap
 Manila.....Spokane
 Manor.....Clarke
 Mansford.....Skagit
 Manzaneta.....Kitsap
 Maple Falls.....Whatcom
 Maplevalley.....King
 Marble.....Stevens
 Marblemount.....Skagit
 Marcus.....Stevens
 Marengo.....Columbia
 Marietta.....Whatcom
 Marion.....Pierce
 Markham.....Chehalis
 Marshall.....Spokane
 Marysville.....Snohomish
 Matlock.....Mason
 Maury.....King
 Mayfield.....Lewis
 Mayview.....Garfield
 Mazama.....Okanogan
 Meritt.....Chelan
 Mead.....Spokane
 Meadow.....Thurston
 Medical Lake.....Spokane
 Melbourne.....Chehalis
 Melmont.....Pierce
 Menlo.....Pacific
 Menno.....Adams
 Meridian.....Pierce
 Mesa.....Franklin
 Methow.....Okanogan
 Meteor.....Ferry
 Meyers Falls.....Stevens
 Mica.....Spokane
 Midland.....Pierce
 Milan.....Spokane
 Miles.....Lincoln
 Milltown.....Skagit
 Mineral.....Lewis
 Mission.....Chelan
 Moab.....Spokane
 Mohler.....Lincoln
 Mold.....Douglas
 Molson.....Okanogan
 Mondovi.....Lincoln
 Monitor.....Coelean
 Monohan.....King
 Monroe.....Snohomish
 Montecristo.....Snohomish
 Montesano.....Chehalis

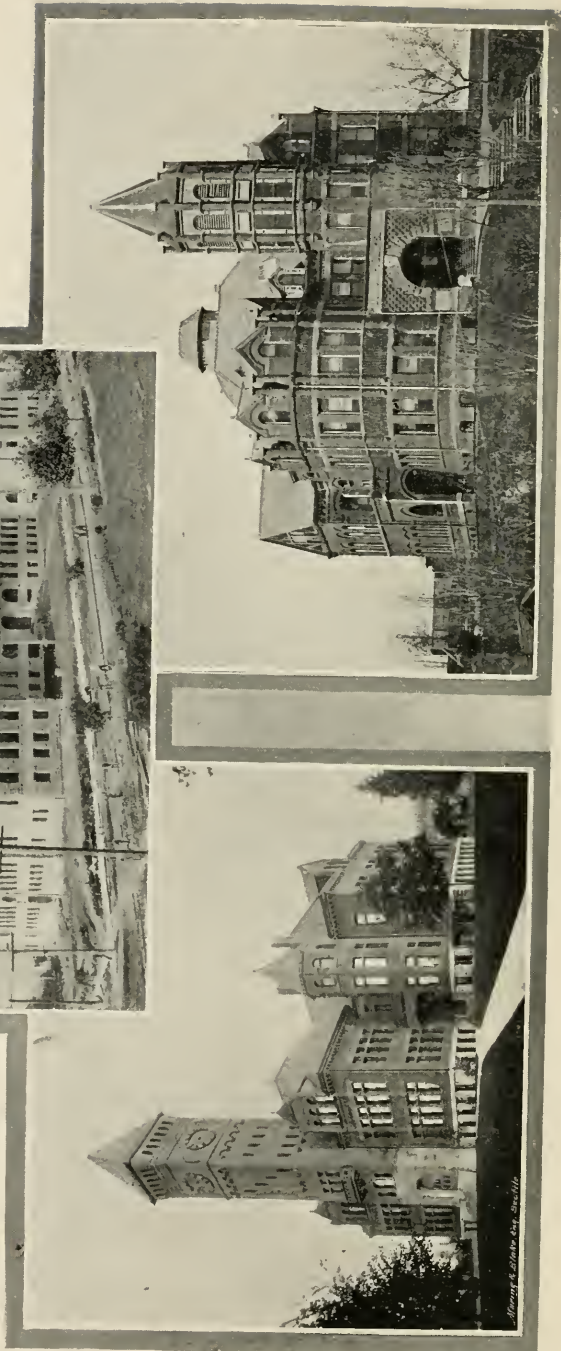
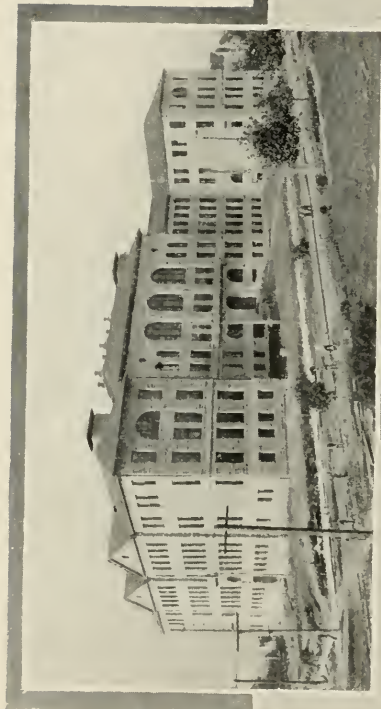
Postoffice. *County.*
 Moore.....Chelan
 Moran.....Spokane
 Morton.....Lewis
 Moscow.....Lincoln
 Mosher.....Snohomish
 Mossyrock.....Lewis
 Mountainview.....Whatcom
 Mounthopec.....Spokane
 Mt. Pleasant.....Skamania
 Mt. Vernon.....Skagit
 Mukilteo.....Snohomish
 Myrtle.....Clallam

N.

Nahcotta.....Pacific
 Napavine.....Lewis
 Nasel.....Pacific
 Neahbay.....Clallam
 Nellita.....Kitsap
 Nelson.....Ferry
 Nemah.....Pacific
 Nespelem.....Okanogan
 Newaukum.....Lewis
 Newcastle.....King
 Newell.....Island
 Newhall.....San Juan
 New Kamilche.....Mason
 Newland.....Adams
 Newman.....Okanogan
 Newport.....Stevens
 Newskah.....Chehalis
 Nighthawk.....Okanogan
 Nile.....Yakima
 Nooksack.....Whatcom
 Nordland.....Jefferson
 Norman.....Snohomish
 Northbend.....King
 Northcove.....Pacific
 Northport.....Stevens
 Northstar.....Thurston
 Northwood.....Whatcom
North Yakima.....Yakima
 Novelty.....King
 Norwalk.....Chehalis

O.

Oakesdale.....Whitman
 Oakharbor.....Island
 Oakpoint.....Cowlitz
 Oakville.....Chehalis
 O'Brien.....King
 Ocosta.....Chehalis
 Odessa.....Lincoln
 Olalla.....Kitsap
 Olema.....Okanogan
 Olequa.....Cowlitz
 Olga.....San Juan
Olympia.....Thurston
 Omak.....Okanogan
 Oneida.....Wahkiakum
 Ophir.....Okanogan
 Orcas.....San Juan
 Orchards.....Clarke
 Orient.....Ferry
 Orillia.....King
 Orondo.....Douglas
 Oroville.....Okanogan
 Orin.....Stevens
 Orting.....Pierce
 Osceola.....King
 Oso.....Snohomish
 Ostrander.....Cowlitz
 Otis.....San Juan
 Otter.....Chehalis
 Outlook.....Yakima
 Oysterville.....Pacific
 Ozetto.....Clallam



Spokane.

Seattle.

SOME OF OUR HIGH SCHOOL BUILDINGS

Pullman.

Postoffice. **P.** *County.*
 Padilla..... Skagit
 Paha..... Adams
 Palmer..... King
 Palouse..... Whitman
 Pampa..... Whitman
 Paradise Lake..... King
 Parkland..... Pierce
Pasco..... Franklin
 Pataha City..... Garfield
 Pateros..... Okanogan
 Patterson..... Klickitat
 Peach..... Lincoln
 Pearson..... Kitsap
 Pe Ell..... Lewis
 Penawawa..... Whitman
 Penrith..... Stevens
 Peola..... Garfield
 Peone..... Spokane
 Perry..... Columbia
 Peshastin..... Chelan
 Pilschie..... King
 Petersburg.....
 Piedmont..... Clallam
 Pilchuck..... Snohomish
 Pine City..... Whitman
 Pinesflat..... Klickitat
 Ping..... Garfield
 Pins..... Jefferson
 Pioneer..... Clarke
 Plaza..... Spokane
 Pleasant..... Klickitat
 Plum..... Lincoln
 Point no Point..... Kitsap
 Point Roberts..... Whatcom
Pomeroy..... Garfield
 Pontiac..... King
Port Angeles..... Clallam
 Portage..... King
 Port Blakeley..... Kitsap
 Port Crescent..... Clallam
 Port Discovery..... Jefferson
 Porter..... Chehalis
 Port Gamble..... Kitsap
 Port Ludlow..... Jefferson
 Port Madison..... Kitsap
 Port Orchard..... Kitsap
 Port Stanley..... San Juan
Port Townsend..... Jefferson
 Port Williams..... Clallam
 Poblatch..... Mason
 Poulsbo..... Kitsap
 Prairie..... Skagit
 Prescott..... Walla Walla
 Preston..... King
 Prevost..... San Juan
 Proebstel..... Clarke
 Prosser..... Yakima
 Pullman..... Whitman
 Puyallup..... Pierce
 Pysht..... Clallam

Q.

Quilcene..... Jefferson
 Quillayute..... Clallam
 Quinault..... Chehalis
 Quincy..... Douglas

R.

Rainier..... Thurston
 Randle..... Lewis
 Ravensda e..... King
 Rayburn..... Chehalis
 Reardan..... Lincoln
 Redmond..... King
 Reedville..... Kitsap
 Renton..... King
Republic..... Ferry
 Reynolds..... Lewis

Postoffice. *County.*
 Rice..... Stevens
 Richardson..... San Juan
 Richmond..... King
 Ridgefield..... Clarke
 Riffe..... Lewis
 Riparia..... Whitman
Ritzville..... Adams
 Riverside..... Okanogan
 Riverview..... Douglas
 Robe..... Snohomish
 Roche Harbor..... San Juan
 Rochester..... Thurston
 Rockford..... Spokane
 Rockcut..... Stevens
 Rocklyn..... Lincoln
 Rollingbay..... Kitsap
 Rome..... Whatcom
 Rosalia..... Whitman
 Rosburg..... Wahiakum
 Rosedale..... Pierce
 Roslyn..... Kittitas
 Roxwell..... Clarke
 Roy..... Pierce
 Royal..... Clallam
 Ryan..... Stevens

S.

Saint Andrews..... Douglas
 Saint Helen..... Cowlitz
 Saint John..... Whitman
 Salkum..... Lewis
 Samish..... Skagit
 San de Fuca..... Island
 Sandypoint..... Island
 Sappho..... Clallam
 Sara..... Clarke
 Satsop..... Chehalis
 Sauk..... Skagit
 Scotia..... Stevens
 Seabeck..... Kitsap
 Seabold..... Kitsap
Seattle..... King
 Sedro-Woolley..... Skagit
 Seguin..... Clallam
 Semiahmoo..... Whatcom
 Sharon..... Lewis
Shelton..... Mason
 Sheridan..... Kitsap
 Sherlock..... Thurston
 Sherman..... Lincoln
 Shuwah..... Clallam
 Sidney..... Kitsap
 Sightly..... Cowlitz
 Silvana..... Snohomish
 Silver..... Okanogan
 Silverbeach..... Whatcom
 Silcott..... Asotin
 Silvercreek..... Lewis
 Silverdale..... Kitsap
 Silverlake..... Cowlitz
 Silverton..... Snohomish
 Sisco..... Snohomish
 Skagit..... Skagit
 Skamekawa..... Wahiakum
 Skye..... Skamania
 Skykomish..... King
 Snohomish..... Snohomish
 Snoqualmie..... King
 Snowden..... Klickitat
South Bend..... Pacific
 Southpark..... King
 South Pruirie..... Pierce
 South Seattle..... King
 Southside..... Douglas
 Spanaway..... Pierce
 Spangle..... Spokane
Spokane..... Spokane
 Spokane Bridge..... Spokane

Postoffice. *County.*
 Sprague..... Lincoln
 Springdale..... Stevens
 Springfield..... Pierce
 Stanwood..... Snohomish
 Starbuck..... Columbia
 Startup..... Snohomish
 Stehekin..... Chelan
 Steilacoom..... Pierce
 Stella..... Cowlitz
Stevenson..... Skamania
 Stones..... King
 Strandell..... Whatcom
 Sulphur Springs..... Lewis
 Sultan..... Snohomish
 Sumas..... Whatcom
 Summit..... Chehalis
 Sumner..... Pierce
 Snnyside..... Yakima
 Sunset..... Whitman
 Swan..... Clallam
 Swofford..... Lewis
 Sylvan..... Pierce

T.

Tabor..... Adams
Tacoma..... Pierce
 Tampoico..... Yakima
 Tanwax..... Pierce
 Tatoosh..... Clallam
 Teller..... Klickitat
 Tekoa..... Whitman
 Tenino..... Thurston
 Thatcher..... San Juan
 Theon..... Asotin
 Thornton..... Whitman
 Thornwood..... Skagit
 Thorp..... Kittitas
 Tipso..... Lincoln
 Tokeland..... Pacific
 Toledo..... Lewis
 Toler..... Douglas
 Tonasket..... Okanogan
 Tolt..... King
 Toppenish..... Yakima
 Toroda..... Okanogan
 Touchet..... Walla Walla
 Toutle..... Cowlitz
 Tracyton..... Kitsap
 Trafton..... Snohomish
 Trent..... Spokane
 Trinidad..... Douglas
 Troutlake..... Klickitat
 Tucker..... Cowlitz
 Tulalip..... Snohomish
 Tula..... Jefferson
 Tumtum..... Stevens
 Tumwater..... Thurston
 Twana..... Mason
 Twin..... Clallam
 Twisp..... Okanogan
 Tye..... Clallam
 Tyler..... Spokane

U.

Underwood..... Skamania
 Union..... Mason
 Uniontown..... Whitman
 Uiban..... Skagit
 Usk..... Stevens
 Utsaladdy..... Island

V.

Valley..... Stevens
 Vanasselt..... King
 Vanburen..... Whatcom
 Vance..... Lewis
Vancouver..... Clarke
 Van Horn..... Skagit

<i>Postoffice.</i>	<i>County.</i>
Vanwyck.....	Whatcom
Vanzandt.....	Whatcom
Vashon.....	King
Vaughn.....	Pierce
Verndale.....	Lewis
Vesta.....	Chehalis
View.....	Clarke
Vinland.....	Kitsap

W.

Wabash.....	King
Wahl.....	Whatcom
Waitsburg.....	Walla Walla
Waldron.....	San Juan
Walker.....	Walla Walla
Walville.....	Lewis
Walla Walla.	Walla Walla
Wallula.....	Walla Walla
Wapato.....	Yakima
Washougal.....	Clarke
Washucna.....	Adams
Waterford.....	Wahkiakum
Waterloo.....	Stevens
Waterville.	Douglas
Wanconda.....	Okanogan
Waukon.....	Lincoln

<i>Postoffice.</i>	<i>County.</i>
Waverly.....	Spokane
Wawawai.....	Whitman
Wayside.....	Spokane
Webster.....	Lewis
Wehesville.....	Okanogan
Welch.....	Spokane
Welcome.....	Whatcom
Wellington.....	King
Welpivit.....	Stevens
Wenas.....	Yakima
Wenatchee.	Chelan
Westbranch.....	Spokane
Western.....	Chehalis
Westport.....	Chehalis
West Seattle.....	King
Westsound.....	San Juan
Whatcom.	Whatcom
Wheatland.....	Adams
Whelea.....	Douglas
White Salmon.....	Klickitat
Wickersham.....	Whatcom
Wilbur.....	Lincoln
Wilcox.....	Whitman
Wildwood.....	Lewis
Wilkeson.....	Pierce
Willapa.....	Pacific

<i>Postoffice.</i>	<i>County.</i>
Willis.....	Adams
Wilson.....	Lewis
Wilsoncreek.....	Douglas
Winchester.....	Douglas
Windom.....	Lewis
Winlock.....	Lewis
Winona.....	Whitman
Winslow.....	Kitsap
Winthrop.....	Okanogan
Wollochet.....	Pierce
Woodinville.....	King
Woodland.....	Cowlitz

Y.

Yakima.....	Yakima
Yale.....	Cowlitz
Yelm.....	Thurston
Yesler.....	King
Yuba.....	Douglas

Z.

Zillah.....	Yakima
Zindel.....	Asotin

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